AMERICAN AGRICULTURIST

FOR THE

FARM · GARDEN · & · HOUSEHOLD

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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THANKSGIVING IS COMING.

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SOMETHING FOR EVERY SUBSCRIBER FOR 1883.

SEE THIRD COVER PAGE.

AMERICAN AGRICULTURIST.

NEW YORK, NOVEMBER, 1882.

Thanksgiving is Coming.

Of all the people in America, who on the thirtieth of November will keep the great national holiday—Thanksgiving, none have more reason to rejoice and return thanks, than the farmer who throughout the year has sown the seed in the fertile earth, watched its development, "first the blade, then the ear, then the full corn in the ear," and at length garnered in the bounteous gifts of the harvest.

All over the land, mighty streams of golden grain have flowed into the granaries, and barns, filling them to repletion. The trees have bent beneath their load of luscious fruit, until it was gathered into barrels, or crushed between the wheels of the mill, to distil its sparkling juice. And now—as the world is preparing for its winter's sleep—the fires are lighted on our hospitable hearths, our homes and sanctuaries are decked with sheaves of wheat, and the purple clusters of the vine, and with thankful hearts we gather within them, to gladly celebrate our Harvest-Home.

And mention must be made of the turkey—the truly American bird—who will at this season be slaughtered on both moorland and farm, and bring a welcome supply of pocket money to the farmer's wife, who has carefully tended, and protected the young brood through sunshine and shower.

As at the old Roman feasts, the royal peacock formed the choicest dish of all, so the stately turkey, who for months has proudly lorded it over the barn-yard community, will now grace our Thanksgiving table, as a fitting head-piece to the board.

This month the sportsman with game-bag and rifle, will make nightly raids upon field and woodland, to shoot the wild turkeys from the roost, bringing down with unerring aim these denizens of the wild woods, in whose peculiar pheasant-like flavor—said to be produced by their feeding on the partridge-berry—the epicure particularly delights.

Although in its wild state the turkey was exclusively an inhabitant of North America, some of the earlier naturalists supposed it to be a native of Africa, and the East Indies, and it derived its name from the probably mistaken belief, that it originated in Turkey. However, it was discovered in this country, and carried to England, in the early part of the 16th Century, and has since become acclimated in most parts of the world.

We may imagine that these birds figured at the first Thanksgiving dinner of the Pilgrim Fathers, for we read, that "after the first harvest of the Colonists at Plymouth, in 1621, Gov. Bradford sent four men out fowling, that they "might after a more special manner rejoice together." And it is most appropriate that one of the largest platters of the elegant dinner set, recently decorated for the White House at Washington, and representing the Fauna and Flora of America, should bear upon it a wild turkey in all its native glory.

But the domestic fowl is now our real Thanksgiving bird, a fine specimen of which is shown in our frontispiece. See how haughtily he seems to strut along, little dreaming that the farmer and his smiling companion—who have daily brought him his quota of meal—are now his secret enemies, endeavoring to take his life: and that soon, decked with paper rosettes, he will adorn some shop window, or hang limp across a market basket, in a city street.

Thanksgiving is peculiarly the American farmer's day, and a farm is the place to spend it; when the wood fires roar merrily up the wide chimneys; the New England kitchen reveals wondrous works of art, in the form of "savory mince and toothsome pumpkin pies;" and the genial host welcomes his guests with open-handed hospitality. Happy is the city man who has country friends to spread wide to him their farm-house door, and bid him come and join in their Thanksgiving.

Prepare for the Holidays.

The beautiful custom of giving gifts to parents, children, relatives, friends, and neighbors, is coming more into vogue every year. It is a pleasant one, and serves to bind the ties of affection and friendship. Nearly everybody delays to procure their Holiday Gifts until the last hour, when they are pressed for time, and are often unable to satisfy themselves. Begin now to make your purchases, and by looking over our Premium List, which accompanied the October number, you cannot only find something to suit every taste, but you can procure the articles with no expense and a little effort, in securing subscriptions for the *American Agriculturist*. For example: One new subscriber will entitle you to a New American Dictionary, with Fifty Thousand Words, or to an elegant Gold-mounted Pencil. For two new subscribers one can secure a very handsome Lady's Portmanteau, of the latest pattern, or a Fruit Knife and Nut Pick. Three new subscribers will ensure you a beautiful Watch Charm and Locket, or a Canvas Portfolio. Four new subscribers will entitle you to receive, post-paid, a substantial Watch and Chain, or a Multum-in-parvo Pocket Knife; and so on. But you must look all over the Premium List to discover what a very great number of desirable things you can procure for your Holiday Presents without money, and with very little trouble. Look especially at the List of our One Dollar Books, elegantly bound and printed, which are given for one new subscriber. Any one of our subscribers who may have lost their Premium List can have another forwarded to them, if they will write us to that effect. We trust, however, that all of our subscribers have preserved their Premium Lists, and are now securing many Premiums for themselves, and many new subscribers for the *American Agriculturist*.

Suggestions for the Season.

Fall Plowing.

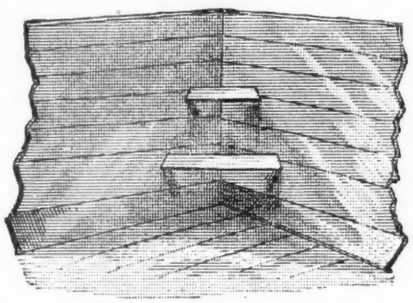
Anyone who has seen the best European farming knows how important it is to thoroughly prepare the ground for the seed. The working of the soil adds nothing, but it helps in changing the form of the plant food compounds, and thus plowing and harrowing becomes indirectly a source of nourishment. The soil is a vast storehouse of plant food, which it holds by virtue of its insolubility. Furthermore, it is only through the action of the air and all those processes, chemical and otherwise, which are covered by such terms as weathering, nitrification, etc., that these essential elements are brought into a soluble form and made available for the use of the growing plant. The chemistry of the soil, as it becomes better understood, teaches in every line the importance of a frequent stirring of the surface of the cropped field. With this in mind it is to the purpose to urge the importance of fall plowing. For other than chemical reasons the stubble or sod may be turned under this fall. Not only will the air circulate more freely, and the processes of reducing the insoluble substances go on more rapidly, but the mechanical texture of the heavy soil especially will be improved. Should insects or their larvæ or "worms" abound in the earth they will be turned out of their winter quarters and destroyed. Aside from these advantages there is a lull in the farm work at this season, and any plowing, or other labor with the soil, will help materially to lessen the rush and hurry that otherwise comes with the busy months of spring. The thoughtful and successful farmer so plans his farming operations that one season helps the next in more ways than one.

Better and Better.

The Watch and Chain described so fully in the October Supplement, page 447, has proved to be a most popular Premium. In that Supplement we offered to send this very useful and ornamental Watch and Chain, post-paid, free, for five new subscribers: we have since made still better terms with the manufacturers, whereby we are enabled to give this most capital Premium **for only four new subscribers** for 1883, at $1.50 each.

Steps and Angles in Bins.

It often occurs that bins for grain, bran, brewer's grains, etc., are so deep that it is not easy to get in and out of them, except by the use of a ladder or movable steps. This trouble is obviated by fixing round oak or ash sticks, like ladder rungs, in one corner. The lower ones, if there are several, may be longer than those above, for convenience, as seen in the engraving. This also shows how the angles between the walls and floors of such bins as



are used for meal, bran, or any ground feed, ought to be made. The angles are finished by planing off two edges of a four-inch board to form a bevel of 45 degrees, and nailing it over the angle between the wall and the floor. This makes the sweeping out of a bin or granary an easy matter, and leaves very little material for meal worms and their kindred.

In-door Work.

The importance of planning for in-door work during stormy days, is not fully appreciated. There are many things that can be done as well when it rains, as during fair days. With small farmers, the threshing of the little amount of grain raised, may be done by hand in stormy weather. The tools should be thoroughly cleaned, mended, and painted if this is needed, and put away to be in readiness for the busy time of spring. A good day's work may be given to the repairing and oiling of the harness. There are enough jobs that may be done under cover, to fill all the rainy days, if there is only planning for it. At this season there may be feed racks needed, and a day at the tool bench is far more profitable in every way, than one spent in lounging, especially if it be done at the village store. Make the most of every day, and not count stormy days as blank ones in the record.

Marketing Poultry.

Poultry which it is not intended to winter, are to be fattened before really severe weather comes on; otherwise money will be lost by them. They will barely hold their own in December on feed which caused them to increase rapidly in weight a month earlier. Those who have watched the market, know that autumn prices usually are highest a little before, and a little after Thanksgiving, say before the middle of November, and soon after the first of December. The reason is, that those who are fattening poultry keep them back for a short time before Thanksgiving day, and before Christmas time, in order to get them in prime order for sale at those times. The result is usually an overstocked market, and plenty or cheap poultry. Soon after the first of January, prices go up again, and well they may, for one or two months' feed has been consumed, and very little weight added.

Capons grow rapidly, and their growth takes up the food, so that we have to wait until growth stops, before they fatten. It is well, therefore, that this delicious class of poultry should not make its appearance before the first of February, when the game-laws prohibit venison, quail, and other choice game from being exposed for sale. At this time, consequently, fat capons and pullets meet a good market, and even during Lent, when a considerable portion of the Christian world abstain from meats, there is a sharp demand for the highest prized meats, to grace the table of the rich on Sundays. It is therefore well to have fine capons ready to supply this demand.

Selection of a Farm.

There are many things to be considered in the selection of a farm. To the rich gentleman who wishes to retire from the noise and tumult of city life, a farm has a different meaning than to the poor man who must toil daily for the maintenance of himself and family. The former will look through golden eye-glasses and seek for luxuries in the country, while the latter must obtain the necessities of life. The one will let individual taste rule in the choice, the other asks himself, "Is this the best place for me to do substantial farming?" No general rules can be given for the rich man who buys a farm for the purpose of spending money, while for the one who seeks to make a living from the land, there are some words of advice.

The size of a farm should be suited to the capacity of the pocket-book. Many young farmers make the mistake of buying a large farm with little money to pay for it. There is nothing that so binds a man as a heavy mortgage. It eats the very heart out of the farmer, and hangs like a leaden weight upon every aspiration of his wife and children. It is better to buy a small farm and have enough capital to work it well. As the surplus increases, it may be invested in more acres, or in a better culture of those that have already proved profitable. There is a size below which many of the economies of the farm can not be practised to the best advantage, and on the other hand there is danger of going beyond that acreage where the most profitable farming may be carried on. It requires considerable executive ability to manage a large farm, and therefore many men are excluded from such by a lack which they may not fully appreciate until the trial has been made and the failure recorded. Farming is not like the taking of a citadel, and can not be done successfully with a rush and a noise. It is a thoughtful and steady working out from well-laid plans—a conquest for crops, and the head must be clear that wins where the seat of a campaign for a lifetime covers townships or even square miles. The soil is the foundation of farming, and it should be fitted to the kinds of crops that it is desired to raise. The differences in the nature and capacities of sand and clay should be understood, and a favorable mixture of the two obtained if there is an opportunity for choosing. A rich soil, with proper management, means good crops at once, but it may be as profitable to invest much less in an equal area of overcropped land, and bring it up to a high state of cultivation by green manuring and other methods of restoration. The farm house is to be the home of the family, and therefore the locality for the farm should be healthful. The richest land for the price may be on the border of a malaria-breeding swamp, but the profits of the investment may be more than balanced by the doctor's bills and loss of time, not to mention the discomfort of fevers in the household. It is important that there be an abundant water supply on all farms, both for the family and the live-stock. There are social considerations that no farmer should overlook in making a choice of a farm. He lives not to himself alone; the children need the privileges of good schools, etc.; in short, the community should be one in which sympathy, goodness and intelligence prevail.

With a good farm of proper size, healthfully located, abundantly supplied with water, good neighbors, and a handy market, a man is so well situated that he ought to make himself and those around him happy. Choose well, and hold on to the choice.

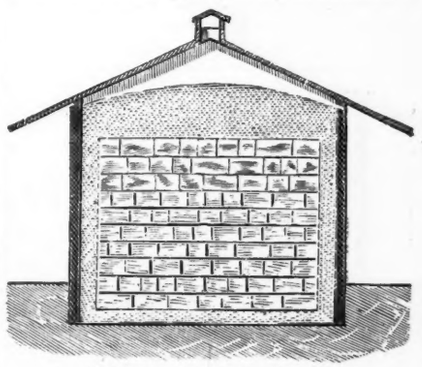
The Growth of the Manure Heap.

Most of the products of the farm have been gathered for the year, but the manure heap should now begin a rapid and healthful growth. The manure crop is perhaps the most important one of the winter season, if not of the whole year. Upon its size and quality the success of the farm operations very largely depend. It should be the aim of every one who has acres to feed, for the production of good crops, to see that the most is made out of the droppings of his farm animals, and the litter that is used to absorb their urine and keep them neat and clean. The best manure is made under cover, and the greatest loss of fertilizing materials is when the manure is permitted to decompose so rapidly as to give off large quantities of ammonia; or when drenched with rains which wash away dark golden streams of the richest, best, and most costly of plant foods. The manure that every farmer should plan to make is well rotted, to be quickly available for the growing crop, and has not sustained the serious loss that comes from water passing through it. There is no doubt that it would pay many farmers who now feed in large open yards to build sheds, under which the manure may be protected.

There are other points in farm economy gained by shed or stable feeding. It takes less food to keep the animals warm and in a healthful condition. A shivering animal is an appeal to both the pocket and the heart of the owner. Give the farm stock good, comfortable winter quarters, and there will be a saving in feed, a better preservation of the manure, and a kindlier feeling all round.

Prepare for the Ice Harvest.

The uses of ice increase every year, and at this season, we have many inquiries as to the construction of buildings for the storing and keeping of this important winter product. A house that will hold enough ice to meet the demands of the average farmer, may be constructed at small cost. There are some general principles to be observed, in locating and building an ice house. There needs to be good drainage of all water from the bottom of the building; no admission of air from beneath, and ample ventilation above. A non-conducting packing material is needed all around the ice, by which it may be kept as much as possible from melting. For this purpose, sawdust, spent tan, wheat chaff, or marsh hay may be used. In filling the house, the ice should be cut into blocks of regular size, that they may pack closely without leaving large air spaces between them. It does not matter so much about the thickness of the ice, if the blocks are properly packed, the thickness of



SECTION OF FILLED ICE HOUSE.

six to eight inches is preferable. Ice keeps best when put in during freezing weather, with enough water thrown over each layer to fill the spaces between the blocks with ice, to the exclusion of the air. The door of the ice house may be left open for a few days before filling, that the ground beneath may become thoroughly frozen. The engraving shows a construction of an ice house that is filled properly. A ventilator is provided at the top, which permits of a circulation of air over the thick covering of sawdust placed upon the ice.

The Muck and Peat Supply.

With many farmers, peat or muck is the cheapest and best addition they can make to home-made manures. We have tried these for many years, even within a short distance of tide water, and the wrack of the sea shore, and found them always a paying investment. The fall when the swamp or peat bog is comparatively dry, is usually the best season to get out a year's supply. Dig it in broad trenches, six or eight feet wide, and go down at least six feet if there is that depth of muck. In this way, you can work with little trouble from the water, below the water level in the bog. Thrown out upon the bank, the material will soon become dry, and will be improving under the action of the frosts, and the atmosphere, all through the winter. Six inches of dry peat covered with leaves, or litter of any kind, makes excellent bedding in a stall, and when mixed with the urine and dumping of the cattle produces a valuable fertilizer. The success of a farmer is generally measured by the length, breadth, and hight of his compost heaps. Study the arithmetic of your muck and peat beds, and work out the salvation of your soil.

The Root Harvest.

A large part of the work of harvesting of the root crop is done this month. Potatoes are not roots, but are often, and quite naturally, classed with them. They should be dug so soon as growth

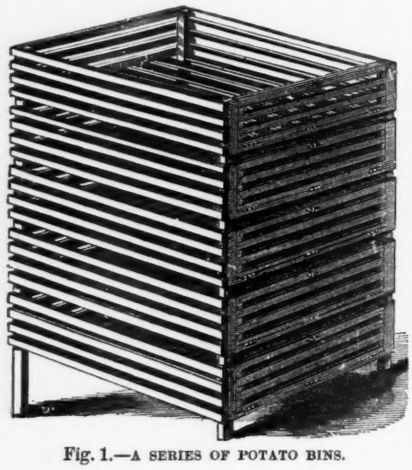


Fig. 1.—A SERIES OF POTATO BINS.

is completed, and ought to be in winter quarters before the middle of the month, and in most sections much earlier than this. The rot, which has been so destructive some seasons, is favored by the tubers remaining in the soil, especially if the weather is wet and the ground is much soaked by water. Store the potatoes in bins (fig. 1) in a dry, cool cellar, with ample ventilation. They may be put in pits in a dry place in the field, and covered with straw, boards, and enough earth to keep the tubers from freezing. If there are any rotten potatoes at digging time, they should be thrown in the burn heap and destroyed, to prevent the spread of the rot fungus. Those that are only slightly af-

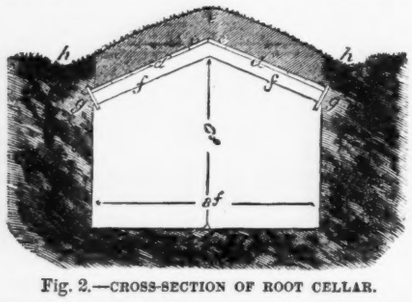


Fig. 2.—CROSS-SECTION OF ROOT CELLAR.

fected should also be removed and fed to farm stock. If a decaying potato remains in the bin or pit, it will communicate the rot to others, and may do much damage. Beets and mangels should be harvested so soon as the growth is finished, or the leaves have wilted from the action of the frosts. These roots will bear only slight frosts without injury. Much of the labor of digging may be done by a horse and plow. Run a furrow with a common plow close to one side of a row, and afterwards pass a subsoil plow near the other side when the roots are loosened and can be quickly removed from the soil. The method of pitting roots has been considered on page 488. A more substantial structure for keeping roots and other

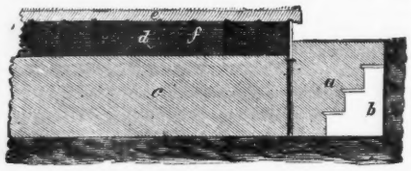


Fig. 3.—LONGITUDINAL SECTION OF ROOT CELLAR.

like products is shown in the accompanying engravings. Figure 2 shows a cross section of a field root cellar dug in dry ground. The excavation is 5 feet deep, 8 feet wide, and 10 feet longer than it is desired to have the cellar. One-half foot below the surface cut a place, *g*, *g*, to form an oblique support for boards 8 inches wide. Rafters, *f*, *f*, 5 feet long, are set in pairs upon these boards every 3 feet the whole length of the cellar. The roof is covered 12 to 18 inches with earth, and sodded, with a gutter provided at each side, *h*, *h*, for the removal of water. The ends are closed with double boarding, filled with sawdust, and provided with doors. Openings over the doors, supplied with movable shutters, give the necessary ventilation. A longitudinal section of the root cellar is shown in figure 3; *a* is the approach; *b*, steps; *c*, body of the cellar; *d*, the board roof; *e*, the earth covering; *f*, rafters. In light sandy soils it will be necessary to wall up the sides with stone or posts and boards. Such a cellar will last for many years, and be thoroughly frost-proof. If 30 feet long, and of the other dimensions given above, it will hold about 700 bushels of roots.

A Great Step Forward.

Our October number, with its great improvements in every direction, will give our subscribers some idea as to what the *American Agriculturist* is to be in the future. We are determined not only to make each number as good as the last, but still better. No expense will be spared in securing the very best journalistic and artistic talent to be had. Every day we are asked "How can you furnish so much original matter and so many beautiful engravings for the small sum of $1.50, when other magazines cost $4.00 a year." We ask you to direct the attention of your friends and neighbors to the merits of this Journal. If any of them would like a copy with a view to canvassing for subscriptions, please forward us their names.

November Notes on Farm Stock.

Horses, with their winter coats, sweat easily. When brought in warm, they should be rubbed dry and blanketed for an hour. Work horses should not be blanketed in the stable, but carriage horses, or those used only upon the road, may be kept warmly blanketed, for though by this they become more sensitive to cold, and must have more care, yet their coat does not grow so close and long, and they are much less likely to sweat when driven. Ground or crushed oats go farther, are better digested, and mix better with other feed than whole ones. They are the best winter feed for horses, but may be mixed with corn or barley meal or wheat-bran and middlings for work horses to advantage. Whole grain is not fed without waste.

Beeves.—In feeding for beef, the notions of each animal should be consulted—his preferences, likes, and dislikes. The object of feeding usually is to get the animal to eat all that he will digest well. Hence a variety should always be at hand, and the ration should be varied by feeding cooked, soaked, or dry meal, as the case may be, with hay and roots. Take great care not to over-feed, and in case of over-feeding, let starvation be the cure. Thus the animal will soon take to feeding again, but will be less likely to fall off much in flesh, than if "physicked."—Nature is the best physician.

Cows in milk need roots, pumpkins, or similar food, to make up for the lack of grass. Where silos are used, a moderate quantity of ensilage, if of good quality, is the best substitute for grass we can have in cold weather.

Sheep should have airy, well-littered sheds, with plenty of sunshine, and protected from snow. One great advantage of keeping sheep is to convert straw into manure. Hence much litter is usually strewn in sheep sheds, to the distress of the sheep, unless they have hard places to lie upon, because their feet and legs get so hot. A few platforms, like old doors, which can be shifted about every few days by turning over, will be greatly enjoyed, and will promote both health and comfort.

Swine.—Push fattening hogs forward as rapidly as possible. Keep them warm and cleanly. Charcoal broken fine and mixed with the cooked feed, is an excellent regulator and tonic, aiding digestion, and promoting fattening to such an extent that it is hard to believe it does not serve as food.

Propagating by Root-Cuttings.

There are but few perennial plants that may not be propagated by cuttings of some sort. With the majority, cuttings of the stems, if properly treated, will produce roots and form new plants. A few, notably some Begonias, the Gloxinias and others, are most readily propagated from the leaves, which are treated as cuttings. Still other plants are multiplied by cuttings of the roots. The use of root cuttings, to judge from their works on propagation, is much less common with European nurserymen than with our own, who employ this method for Raspberries and Blackberries almost exclusively. Unlike the stems, roots do not have regular buds, but they can, under proper conditions, be made to produce them. Hence, in making root-cuttings, we must give them the needed time, and place them under conditions favorable to the formation of these unusual, or "adventitious buds," as they are termed. As a rule, the cuttings should be made in autumn, and if properly kept during the winter, they will be ready to plant in the open ground by spring. The method with the Blackberry and Raspberry will illustrate this kind of propagation. When the season of growth is over, and before the ground freezes, the plants are taken up and their roots made into cuttings. Sometimes the larger roots are cut off with a sharp spade and taken up, leaving the plant in place. The roots of the size of a lead pencil and smaller, are cut into lengths of two or three inches. These are then stratified with earth in boxes. Any common box will answer, as it need not be tight. Bore several inch holes in the bottom, and place over these a layer of straw. Put in an inch or two of earth, a layer of root-cuttings; cover these with a layer of earth, and so alternating until the box is full. Nail on the cover, and bury the box in a well-drained place, so covering it with earth that it will not freeze. Another method is, to place the root-cuttings in alternate layers with damp Sphagnum Moss, and keep the box in a cool cellar. In spring the pieces of root will be found to have formed fibrous roots and one or more buds or shoots, and are ready to be planted in the open ground, where, by the end of the season, they will make strong plants. This method of propagation has a much wider application than is generally supposed, and may be tried with all plants of which the stems do not root readily, with fair prospect of success.

Some plants grow so readily from root-cuttings that this previous preparation is not required. This is the case with those trees and shrubs which

naturally throw up suckers, especially when their roots are wounded. The Ailanthus tree may be propagated by setting root-cuttings in a furrow, as if they were large seeds, and but few will fail to grow. A number of other forest trees and several fruit trees may be propagated in the same manner. This offers an interesting field for experiment.

Half-Hardy Shrubs.

A number of our shrubs are hardy in ordinary winters, but will not endure one of unusual severity, while others can not be depended upon in any winter. Both kinds must be taken up and housed, or be protected where they stand. One of the simplest methods of winter protection is to lay the plant down and cover it with a few inches of soil, as practised on the large scale with the European Raspberry. The Fig may be protected in the same manner, but its roots must be so trained as to allow of the bending. A modification of this is to cover the plant with sods, placed grass-side up. This method is advised for the so-called Monthly Roses (the Bengal or China), which may thus be left in the beds with safety. On covering with earth or sods, it should not be done too early, but delayed until there is danger that the ground may be frozen.

But many plants can not be bent down, and such must be protected as they stand. The old gardeners used to take great pains to straw-up their shrubs, and make them into neat-looking bundles. Quite as effective a method of protecting is to use the boughs of some evergreen tree—spruce answers well. These are stuck in the soil around the shrub; or, if that is too large, some may be tied in its upper part. Some evergreen trees are tender when first planted, but when large and well established, are hardy. Such, while small, are easily protected by the branches of other evergreens. In the absence of other means, we have used simply common brush, kept from resting upon the shrub by using a few stakes to receive its weight.

Parsnips and Salsify.

The same treatment in winter will not answer for all root-crops alike. Beets and carrots are the least hardy of all, and when frozen lose their sweetness to a marked extent. The parsnip is not only not injured, but many think it is greatly improved by freezing. If the amount of sugar is not actually increased, its flesh is so modified that it tastes sweeter. The parsnip and salsify are our very hardiest roots (though we should include horse-radish,) and may be left without harm in the soil where they grew. But as we can not depend upon finding the ground open at all times, a share should be dug to supply the table. These may be packed in boxes or barrels, and if they are to be kept in the cellar, should be covered with sand to prevent them from shrivelling. They can as well be placed in some shed, or other out-building.

Young Fruit Trees.

Many seem to think that when they have planted an orchard, they have done all that the trees require. A neglected old orchard is a sorry sight, but a neglected young one is much worse. A stray animal or two, especially when snow is on the ground, will disfigure many trees in a short time by browsing their tops or gnawing the bark. Fences and gates need looking to. Young trees, especially those set last spring or this fall, should have a mound of earth at the base, not a mere heap thrown up carelessly, but made smooth and firm, in the form of a sharp cone, 12 or 15 inches high. This will not only aid in keeping the tree upright, but will prevent the attacks of mice. Should snow be deep enough to cover the mound, mice may work under it while it is light and newly fallen, and it will be necessary to go through the orchard and press the snow around each tree with the foot. Rabbits will work on the snow, not only barking the trunks, but we have known them, when the snow was sufficiently deep, to cut off the end of every twig within their reach. These animals have a great aversion to blood, and will not touch trees that have been smeared with it. In large orchards, blood is procured at a slaughter-house, and applied to the trees by means of a swab, made by tying a few corn-husks to a stick. Rabbits are in good condition this month, and the use of traps will both prevent mischief and afford material for an excellent pie or fricasee. Sometimes snow is very damp, and as it falls, lodges in the tops of the trees and accumulates there. If this is allowed to freeze, the branches will be badly injured should there come a strong wind. When snow thus gathers, it should by all means be shaken out of the tree before it has time to freeze.

The Asparagus Bed.

The tops should remain until their turning yellow shows that they have finished their work of preparing the roots for next season's yield. The tops should be burned in order to prevent the scattering of the seed, as an asparagus plant is a rather obstinate weed. This is one of the vegetables that can hardly have too much manure. An abundance of stable manure, supplemented by a good dressing of nitrate of soda, and in inland localities, one of salt. These, the nitrate and the salt, are best applied in spring, but the manure should go on before winter. While it is thoroughly hardy, the shoots appear earlier in spring, if the bed has a covering of three inches or more of coarse manure.

Wintering the Cabbages.

It used to be thought necessary to store cabbages in a cellar, or in some kind of a pit, a method of wintering now rarely followed. The usual way of keeping them is to select a dry place, if the bed where they grew was not so, and place the cabbages heads downward. They are sometimes placed close together in a single row, running across the bed or field, and a furrow thrown up to them on either side. The more common method is to lay them down to form a bed 8 feet wide, and by the use of the plow and shovels, cover the heads and a part of the stumps. The Savoys, with their curled and wrinkled leaves, do not keep so well as the Drum-heads, when laid down in this way. For those a ridge may be thrown up with the plow, and the cabbages laid against it, heads up; earth is plowed to the roots, and thrown in to partly cover the stumps. When cold weather comes, the heads are to be covered with cornstalks, leaves, or other litter. Neither of these methods allows a head or two to be readily taken for use. It is well to have the family supply in some place near at hand. If there is an unused pit or cold-frame, the cabbages may be set in them upright, and covered with shutters, or with straw or leaves. A trench may be dug and used in the same manner. Those who like cabbage greens, should prepare for them, by gathering up the stumps from which the heads have been cut, and covering them with earth against a ridge, or otherwise give them partial protection. They are less hardy than the heads, and will not grow well if exposed all winter to the weather.

Beginning a Garden.

If one proposes to begin gardening, whether to raise vegetables for home use or for sale, commencement should not be put off until spring. The work could have been started a month or two earlier, but much can yet be done in all but very cold localities. It is of little use to try to make a garden on wet land. Unless the soil has a natural drainage, tile or plank drains should be laid the first thing. If sod-land be selected, apply a good dressing of manure, break it up, and let it lie until spring, when another manuring and plowing, with thorough harrowing, will be needed. The success in the garden depends largely upon the amount of manure applied to it. Stable manure to the extent of 50 to 80 loads to the acre is needed, or if so much can not be obtained, the lack should be supplied by the use of ground-bone, fish-guano, superphosphate, or other good commercial fertilizer.

Wintering the Celery.

Probably more celery is injured by too much warmth than by excessive cold. While not so hardy as some vegetables, it is not injured by moderate frosts. Last month (p. 397), we described the manner of banking up that required for early use. Market gardeners sometimes leave the celery where it grew, banking it up to the tops with earth, and at the approach of severe weather, covering with leaves. There is the risk of being unable to get out the celery when wanted, when left thus, hence the crop for use in late winter is stored in trenches, where it is accessible at any time. The trenches must be where water will not settle in them, and should not be over 10 inches wide, the depth being equal to the hight of the plants. The celery is placed upright, the plants being close together, but no earth is put between them. The tops are to be covered with leaves, straw, or coarse hay, but not until the weather is likely to be severe, but the covering material should be at hand to be ready in an emergency. To avoid injury from heating, the packing in trenches is delayed as long as it is safe to do so, which, near New York, is to the end of the month. But the plants in the rows are protected by roughly earthing them up to the tops early in the month. The tops will not be injured if the thermometer falls five or six degrees below freezing, and the covering may be slight at first, to be increased as the cold is more severe, until finally it is 6 or 8 inches thick. We mentioned last month the use of boxes for storing celery in the cellar. This is a neat and ready way, but not practicable in a warm cellar. Instead of boxes, boards may be used. A row of boarding is placed 9 inches from the cellar wall, and as high as the tops of the celery; this is to be filled with the upright stalks as if it were a trench. At 9 inches from this, two more rows of boarding are set up, also 9 inches apart, forming another trench, distant from the former by its own width, this is to be filled, and so on. This will leave the celery in strips 9 inches wide, separated by spaces the same width. The spaces are to avoid the heating, which would take place if larger masses of it were placed together. If the floor of the cellar is cemented or bricked, a couple of inches of soil should be placed on it before the celery is packed. It will be necessary to use some strips or stays to hold up the boards. With a cellar bottom of earth, no soil is needed, and the boards may be held up by driving stakes. With such a mass of vegetable matter, considerable heat is given off, and free ventilation will be needed to keep the temperature low enough to prevent injury.

Making and Using Cold Frames.

A cold frame is intended to merely preserve plants during the severe weather of winter, and not for growing them. It consists of two boards running parallel about six feet apart, and nailed to posts. The rear one should be 12 in. high, and the front one 8 in., to give the sashes, which are placed lengthwise from one to the other, the right pitch. The cold frame may be of any desired length, and should be built where it can have shelter from the northwest. A high close board-fence is almost indispensable for this particular in some localities. The sashes slant to the south or southeast. The cabbage, lettuce, and cauliflower plants are first grown in the open ground and transplanted when about a month old, to the cold frames, in which they are to remain through the winter. Each sash, 6 by 3 ft., will cover 500 cabbage or cauliflower, and 800 lettuce plants. These plants are nearly hardy, and only need to be protected from sudden changes of temperature. In clear winter days the sashes may be tilted at the rear end, in order to give the plants abundant air. All the management of the cold frame must keep in view the fact that its object is not to promote growth, but to keep the plants in a perfectly dormant state. In the South, ridges of earth serve the purpose, and take the place of cold frames used in the North. If the soil in the frames is to be used for growing other plants, after the removal of the cabbage, lettuce, etc., to the open ground in spring, it should be both rich and mellow.

The Grapevine in November.

Those who have many vines, or a vineyard, will have fixed upon some method or "system" of training and pruning, which they will follow so far as the vines will allow. But we have advocated the planting of vines wherever there is soil enough for their roots, whether on the largest farm, or in the smallest village yard, and have advised their training along fences, and upon buildings, whenever there was no room for a trellis. We have advised growing grapevines in the best way, if possible, but at any rate, and under unfavorable conditions, to plant one or several vines, and do the best with it that circumstances will allow. Those who have followed our advice, will naturally ask what shall be done with their vines, now that the season for pruning is at hand. It is probable that the vine of each reader, will be unlike to, and require a different treatment from, that of every other reader. In whatever condition the vine may be, when the fruit has been gathered, and the leaves have fallen, the observance of a few simple points will allow any intelligent person to treat it properly. The vine, as one stands before it, after the leaves are off, is made up of old wood and new. The stems more than one season old, have no buds, but they bear smaller stems, that grew in the season now closing. In spring and early summer, they were green and tender, and we mentioned them as *shoots*. Now that they have ripened and are hard and brown, we call them *canes*. Every vine, large or small, is now mainly made up of these canes. There may be in a young vine but a few of them, but a large old one will show a mass of such canes. Now, however perplexed and confused an old vine may seem, it is really a repetition of the same parts. There will be some old stems, but the mass is of last summer's growth. Take one of these canes by itself, whether there are but two or three upon a young vine, or a multitude upon an old one, examine and understand it, and see what it will do next year, and its treatment will become plain. Let figure 1 represent a cane, whether the only one from a very young vine, or one of many upon an old vine. It may be but three feet long, or it may have grown to the length of 20 feet, but long or short, large or small, it will show buds on alternate sides, which are separated by a portion of stem, which is longer or shorter, according to the variety. These buds are placed at a point where the leaf of last summer was attached. Aside from the old stems, which grew a year (or several years) before, the whole vine is made up of repetitions of such canes. No matter how many they may be, or how much confused they may seem, this is all that the vine has at this season.

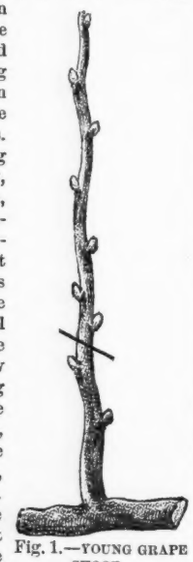


Fig. 1.—YOUNG GRAPE SHOOT.

Fig. 2.—BADLY PRUNED BRANCH.

Why Do We Prune?

We would, at the risk of repetition, impress the fact that the whole vine (save the old stems,) is made up of buds, separated by sections of variable length (three inches to a foot or more) of cane. Another point important to bear in mind, is that all growth of next year, shoot, leaf, and fruit, will come from these buds, and from *nowhere else*, as a rule, though on a vigorous old vine, chance, or adventitious shoots may appear upon the stems. Unless it is desired to have a cane just there, such shoots should be broken off as they appear. It will be seen that these buds are important points, not only next year's growth, but the whole future of the vine, depends upon them. Suppose we did not prune, what would happen? If the cane, fig. 1, were left as the fall of the leaf found it, its buds would next spring push into shoots. The uppermost buds, according to a well known law of growth, would start first, and push their shoots, the next lower ones, starting later, would produce smaller shoots, and there would be a series of smaller shoots as we go down the cane, as in fig. 2, while the lowermost buds, being deprived of sap by the upper shoots, may not start at all. It will be seen that the most vigorous shoots will be from the upper buds, while the lower buds, which were formed earliest in the season, and are most likely to contain the rudiments of fruit, are quite starved and useless. Each year, if the vine goes unpruned, the new growth will be further from the root, and the best developed buds, starved, as it were, by the more rapid growth of those above them, and but very little fruit will be produced. Suppose instead of allowing the cane (fig. 1,) to go unpruned, we at this season cut it off as shown by the line, leaving but two buds. Next spring, these two, having all the nourishment that would otherwise have gone to the buds above them, will push with great vigor, and being the oldest and best developed, will probably bear fruit abundantly, and next autumn would present the appearance of fig. 3, as contrasted with that of fig. 2. We prune then, to be more sure of fruit, and to avoid growing a great number of shoots for which we have no use. We wish to direct the energies of the vine to the production of fruit, rather than to the forming of a great mass of shoots and leaves. Now if one understands this as to a single cane,

Fig. 3. WELL PRUNED BRANCH.

The Pruning of the Whole Vine is Plain.

One should use his imagination, and knowing that the future growth will come from the buds, now plainly seen, he can at a glance tell what to remove. Standing before an old vine, no matter how complicated it may seem, let him bear in mind that each bud will next spring push a leafy, and may be fruiting shoot. If there are too many canes, so many that even one or two shoots from each will cause crowding, let him cut them out altogether. Then cut the canes that are allowed to remain, back to two buds each, keeping in mind the fact that each of these two buds will produce a shoot, which next autumn will appear as a cane, just like the one he has now before him. With an old and neglected vine, we can only give these general directions, which, if intelligently followed, will produce good results. There is greater danger that too many buds will be left, than that too many will be cut away. In pruning it is rarely desirable to provide for more than two shoots from a cane, but it may be well, especially in severe climates, and to guard against accidents, to leave three or four buds in pruning at this season, and then late in February, or early in March, at any rate before the sap starts, cut away the extra buds, leaving but two to grow. An intelligent consideration of the few simple facts here stated, will allow any one to bring a neglected old vine into a fair condition of fruitfulness. The same principles apply to the treatment of young vines, but these, if our directions heretofore given from time to time have been followed, will be less perplexing to the novice.

Experiment in Cutting and Planting Potatoes.

BY HENRY E. ALVORD, OF HOUGHTON FARM.

For years past, the agricultural papers of the country have published accounts of trials with potatoes cut and planted in different ways. These tests have seldom been repeated by the same person, or carried on by persons in different places, in such a way as to be comparable, and hence have been of little value. To do this work in a thorough and systematic manner, making a careful study of the potato plant, and incidentally testing the latest proposed method of cutting seed potatoes, it was last April agreed by the N. Y. Agricultural Experiment Station and Houghton Farm (Experiment Dept.) to institute two parallel series of potato trials. The schedule was arranged for this coöperative test, and Early Rose potatoes were planted in May, in small garden plots, the seed being cut in various ways, and planted at different depths for both level and ridge culture. All were on soil in fair condition, half being manured and half unmanured. The rows were placed three feet apart, and the hills one foot apart in the rows.

On the State Farm, at Geneva, the season was favorable, and the trial progressed without accident or interruption. Accounts of the work and results there have been published in the Station Bulletins II and VII, (July 29 and Sept. 2,) to which reference is made for details. It is intended to give here only the report of results at Geneva, for comparison.

At Houghton Farm the season was unfavorable; cold and wet during the vegetating period, then hot and very dry until the potatoes were dug, the last of August. The plots were badly washed by a cold rain, and stood soaked for some days after planting. The damage was such in some rows, out of the twenty-four differently planted, that they were dropped from the record. But the facts hereafter given relate to rows so far undisturbed and of such average condition, considering the season, as to be fair samples for comparison. The results are given in tabular form as most compact. The figures are taken from twenty average hills, in rows of like treatment, manured and unmanured. The yield per acre is estimated by regarding twenty hills, as planted, as $^1/_{726}$th part of an acre.

TABLE OF RESULTS.

How Cut and Planted.	*Potatoes in 20 Hills.*	*Weight of Product, 20 Hills.*	*Estimated Yield Per Acre.*
	No.	*Lbs. Oz.*	*Bushels.*
AT HOUGHTON FARM—MANURED PLOTS.			
Single eyes, cut shallow	89	2 6	20½
Single eyes, cut deep	101	6 11½	81½
Ordinary cutting and planting	175	18 8	224
Whole tubers, ordinary planting	224	19 3	239½
Potato peelings, pared close	268	11 8	139
AT HOUGHTON FARM—UNMANURED.			
Single eyes, cut shallow	134	2 6	20½
Single eyes, cut deep	109	5 15	72
Ordinary cutting and planting	192	16 13	202½
Whole tubers, ordinary planting	208	14 8	175½
Potato peelings, pared close	228	9 15	120½
AT N. Y. STATE AGR'L EXPERIMENT STATION.			
Single eyes, cut shallow	52	3 13	37½
Single eyes, cut deep	129	15 1½	191
Ordinary cutting and planting	177	16 13½	202
Whole tubers, ordinary planting	177	13 1½	158
Potato peelings, pared close	Not yet reported.		

The agreement in quantity and size of the product of ordinary cutting and planting in the three cases above, is very striking; the disagreement in

other results equally so! At the State Station, the ordinary method produced the largest gross yield, but considering the size of the potatoes, the seed cut deep, single eyes, gave the best result. At Houghton Farm, the ordinary method stood well ahead, on the unmanured land; on the manured plots, the whole potatoes as seed gave the greatest weight, but considering the size, the ordinary cutting gave the best result there also. At the State Station, single eyes, cut deep, did very much better than whole potatoes; at Houghton Farm, exactly the reverse appears, the product of whole seed, in number and in weight, on both manured and unmanured land, being double that of the deep cut, single eyes. There is nothing to reconcile or explain this great difference.

In Bulletin VII, from Geneva, the following comment is made upon the facts reported: "Further trials are required before we can eliminate the effect of the soil in order to determine the influence of the cutting of the seed as a factor of determinate value. We can but claim at present that we have obtained strong indications of the value of a method, easy of application, and seems potent for influencing quality and yield." This view was justified by the record, provided the average size of the tubers was regarded as more important than gross product. At Houghton Farm, the potatoes were not classified as "merchantable" and "small," because the question, What is a merchantable potato? at once arose; it seemed better to rely upon recorded facts than permit opinion to modify them.

The only comment possible on the Houghton Farm results, is that nothing has been found better than "ordinary cutting and planting"; a medium-sized whole potato being the next best seed.

These combined trials, with their contradictions, serve mainly to show that no conclusion is admissible from one year's work in agricultural experiments. Those who are waiting and watching must be patient with the experimenters. Trials like these must be repeated, and results compared and verified, until the elements of error can be overcome. A preliminary report like this merely exhibits its own weakness, and serves to emphasize these truths. All the labor and cost of a season's work may bring no result, except forming a part of the final record. No single year of field experimentation can be depended upon to establish a single fact. One swallow does not make a summer.

Rose Growing in the Window.

Probably the majority of those who have had no experience, if asked which flower they would select for window culture would answer, "The Rose." Hardly another can be selected that will ordinarily cause so much disappointment, and as a rule we rarely see a good specimen in a window, even where geraniums and other plants are flourishing. The chief causes of these failures are: Starting with the wrong varieties and expecting too much of them. Those best suited for windows are those known as Bengal or China roses. They bloom more frequently than any others, and are often called "Monthly" or "Daily" Roses. With fairly good treatment, they will produce flowers, not very large, nor as a rule fragrant, but they are roses. For fragrance, we must take some of the more easily managed Tea Roses, those which will succeed with proper care. In saying that one cause of failure is expecting too much from the rose, we have reference to the too common treatment they receive. When planted out in the garden, they bloom more or less all summer, and especially during the early autumn. They are taken up at the approach of frost, potted, taken to the house, and expected to bloom all winter. They will not do it. They must have a season of rest after being disturbed, and if they recover and produce flowers by spring it is all that can be expected. Those who wish roses for the window should keep them in pots all summer, plunging them in the soil up to the edge of the pot. In September, they may be repotted, pruned quite severely, and kept in a partially shaded place until they have become established. When taken in, place them first in a room where the windows can be opened every mild day, and thus gradually accustom them to the change. But many would like to cultivate roses who have none in the garden, and must begin anew. Such should procure of the florist plants he has prepared for winter blooming, and which have not been at all forced. Prefer plants that have not yet bloomed, and all the better if they have no buds.

Of the Bengal Roses, probably *Agrippina* is the best; it is one of the most generally grown, and produces its dark-crimson flowers very freely. *Louis Philippe* is another good crimson. Of the blush sorts, *Mrs. Bosanquet*, and *Daily Blush; Daily White* is a good white variety.

Among the Tea Roses, *Clara Sylvain* (a cross between a Tea and Bengal) is a fine white; *Safrano*, fine apricot yellow; *Le Pactole*, canary yellow; *Bon Silene*, rich salmon pink. The Tea Roses as a rule are more beautiful in the bud than when open.

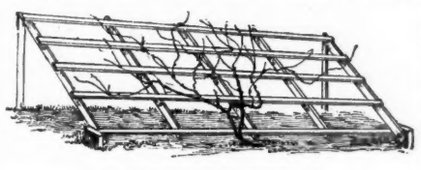
Good loam mixed with old cow manure makes a good soil for roses, but any soil that is not too stiff will do, as manure can be supplied in the form of liquid. Do not over water; better let the leaves flag once in a while than to keep the soil too wet. Give liquid manure (made from cow dung), as weak as tea in color, only when the plants are growing. Shower now and then to remove dust. The Green Fly is the most common insect in the house; for those, shower or dip the plant in tobacco-water. When a shoot has bloomed, cut it back to a strong bud, and another will soon appear.

A Convenient Grape Trellis.

E. E. REXFORD, WIS.

One who has grown grapes, or any other vine which has to be laid down in fall, and covered, to enable it to stand our winters at the North, knows what a task it is to do the work properly. The summer's growth has to be untangled from about the pillars or wires over which it has clambered, and very often a large share of the vine is cut off, as the quickest and easiest way out of the difficulty.

For some three years past, I have used the trellis described below, and have found it to be "just the thing." When the time comes to cover the vines, I remove the support of the trellis, and lay it flat on the ground. The vines do not have to be disturbed at all. In spring, when the covering is removed, the trellis is raised, and the supports put in place. There is no tying up of vines or branches with this trellis, consequently a saving of time, labor, and vexation. This trellis can be made to stand perpendicular or slanting, by changing the position of the posts supporting it. Take two pieces of plank, and bore holes through the upper part of them, to receive the bolts which are to hold the



A HINGED GRAPE TRELLIS.

trellis in place. Drive these pieces into the ground, as far apart as the trellis is long. The trellis can be made of any convenient size, and consists simply of five stout pieces of wood, nailed firmly together with long cross-strips, to furnish support for the vines. At the bottom of the end pieces, bore two holes to correspond with those in the pieces of plank, and put an iron bolt, fastening with a nut, through these end pieces and the planks, thus making a hinge upon which the trellis can be made to move easily. This trellis is so simple, that any man can make one in a short time.

[Of course a trellis of this kind can only be useful while the vine is young and flexible. As it becomes older, it will be more difficult to bend it down, but as the vine gets age the necessity for protecting it will diminish, as it will either become acclimated or prove to be too tender for the locality in which it has been growing.—ED.]

Fifty Thousand More.

At no period since the flush times immediately following the war, have the additions to our Subscription List been so large as at the present time. Every mail which now reaches us brings new names from all quarters of the country, and our most sanguine expectations are being realized. During the next few months we shall certainly add no less than Fifty Thousand recruits to our army of subscribers. We hope every one of our old friends will enlist for another year, and bring fresh accessions with them. Renew your subscription now, without waiting until the end of the year, so that your name may be immediately entered on our books. Forward your subscription To-day.

Study the Farm Animals.

When a Menagerie or Show of wild animals comes into a neighborhood, the boys are all wide awake over the matter; even the "older boys" find an excuse for going to the show, in the fact that it is instructive and allows them to see the animals belonging to Asia, Africa, and other parts of the world. A collection of wild beasts is interesting and instructive, but not more so than those that are to be daily seen at home. Every farm has a greater or less number of animals, which are quite as interesting as those in the menagerie. It is well to see and learn the difference between the Elephant of Asia and the African Elephant, and to see the Tapir, a sort of small edition of the Elephant, which looks as if it were waiting for its long snout to grow into a trunk. It is interesting to know that these animals, the Elephant and the Tapir, are related and belong to the order of *Pachyderms*, or thick-skinned creatures, and to compare these with the Rhinoceros. But how about those pachyderms at home in the pen? The Pigs that one daily feeds are quite as interesting as the Tapir or Peccary. Where did they come from, and how have they changed from the wild form? It is interesting to see the Sacred or Brahmin Bull, with a big lump on its back. But how about the old Cows at home? Did they originally have humps? or did they come from some other race of wild cattle? The Zebras are like small horses, and beautifully striped. Are they related to old "Jack" and "Charlie," that are worked every day? It is well to improve the opportunity that the menagerie affords us for adding to our knowledge of the animals of far-off countries, but do not let the interest in them stop with these. Every Fair held this autumn presented a collection of brutes quite as worthy of study as those in any menagerie. Farm-life affords a vast number of interesting subjects for study, among which none are more attractive than the tracing out of the life history of our domestic animals, to learn where they originated, and how they differ from the animals in the wild state. If the studies of young men could be in some manner directed to the things common to their daily lives, we should have much less upon that important subject, "How to Keep Boys on the Farm."

Do the Fairs Pay?—The new ideas gathered—we might say harvested—at the annual exhibitions are good seeds that often fall on rich ground, and spring up to the honor of all who have aided in making the fair a success. The Agricultural Exhibitions have laid the foundations of social and esthetic improvement, which are manifest in every home whose inmates are leaders in the various departments of the town or county fair. It is hoped that no opportunity has been lost to profit by a day of sight-seeing, social intercourse, and study of the various new and improved implements, fruits, farm animals, etc., that should be found on the grounds of every well conducted agricultural fair. If not too late, go once more to some exhibition before the season of fairs closes for the year.

"Ennobling" of Grade Stock.

BY COL. M. C. WELD.

In the use of the word "ennobling," I give an English equivalent of a well-known German expression as applied to the improvement which breeding produces in both plants and animals. As our Herd-books are conducted, no amount of crossing with recorded sires will wipe out the stains of plebeian blood. We can point to Grade Jerseys which are known to have only an hundred and twenty-eighth of common blood, and yet are grades, and must continue to be; and their progeny can not be recorded. This is the seventh generation from the scrub or common cow. It is quite likely that there may be a few grades of even higher blood than this. The eighth cross represents only one two hundred and fifty-sixth of common blood. Thus:

The 1st cross is $^1/_2$ pure, and $^1/_2$ common blood.
The 2d cross is $^3/_4$ pure, and $^1/_4$ common blood.
The 3d cross is $^7/_8$ pure, and $^1/_8$ common blood.
The 4th cross is $^{15}/_{16}$ pure, and $^1/_{16}$ common blood.
The 5th cross is $^{31}/_{32}$ pure, and $^1/_{32}$ common blood.
The 6th cross is $^{63}/_{64}$ pure, and $^1/_{64}$ common blood.
The 7th cross is $^{127}/_{128}$ pure, and $^1/_{128}$ common blood.
The 8th cross is $^{255}/_{256}$ pure, and $^1/_{256}$ common blood.

Such an animal is for all useful purposes pure-blooded, and if the blood be really good, the sires well selected, and the dams good, it will be better to breed from—a better type of the breed, whatever that may be, than the common run of perfectly pure animals raised away from the natural home of the breed.—The English Shorthorn Herd-book records any cow which shows in her pedigree five crosses of recorded bulls. In such a case every sire for five generations must be given, with name and number, and we presume the breeder must be able and ready to exhibit his private herd register in which the dates of service and birth are kept, with descriptions of the marks or distinguishing features of the animals. The starting point, however, among English Shorthorn breeders can not well be a scrub or mongrel of mixed blood, as it might be with us, for the breeding starts with a well-bred "common cow"—a cow without a pedigree, but with all the evidences of blood that a high grade has with us, and in fact she would be of just as good, or perhaps even better blood than the foundation stock from which sprung, by good breeding, the Shorthorns, or "Improved Shorthorns," as they used to be called. Hence it follows that, should we in this country admit such high grade animals to record, and regard them as to all intents and purposes pure, it would be necessary to add several generations to the number deemed sufficient in breeding up from "common cows" in England.

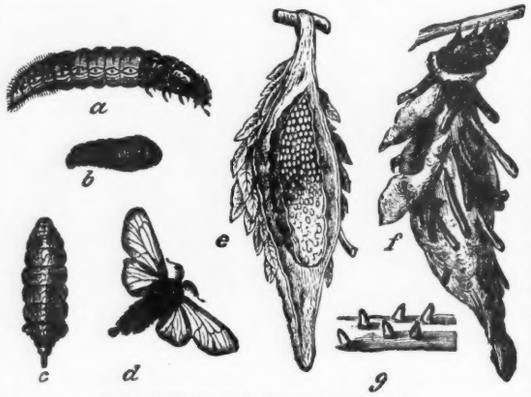
This whole subject was thoroughly discussed by the Shorthorn breeders several years ago, and, if I remember rightly, considerable acrimony (perhaps it might be called frictional electricity) was developed. So far as we know, the subject has hardly been discussed by the breeders of other kinds of cattle, and though a few years ago it seemed as if it might for several reasons be really worth while to record such animals, times have now changed, and it seems the rather preferable to devise some way of excluding from the records many animals of undoubted purity of blood, but of individual inferiority.

The facts which argue in favor of opening the records to high grades are: 1st, that by so doing many breeders who are now without hope of ever getting their herds recorded, would begin at once to breed with care, and to keep accurate pedigrees. 2d, it would cause a demand for bull calves, and a much more general use of thoroughbred sires.

The more people study pedigrees, the more they see the worthlessness of many, and the great value of a few; and yet, for us with grade cows, the poorest, healthy, thoroughbred bull is likely, nay almost certain, to produce better results than any grade, for one is not likely to find grades of $^{127}/_{128}$th, or even of the fifth generation, ($^{31}/_{32}$ds.) The talk among Shorthorn men about "17s" and "American Woods," and all that, indicates that "short pedigrees," or long ones originating in this country, though in the Herd-book, would find no favor here, either in this or other breeds. I firmly believe that the life of a breed, away from its birth place, is comparatively short, and to maintain strong race characteristics, it is necessary to refresh the blood by occasional strains from the fountain head.

The Bag-Worm or Basket-Worm.

One of the most interesting of the injurious insects of the farm and garden, is the Bag-worm (*Thyridopteryx ephemeræformis*). The engraving shows this pest in the various stages of development. The methods by which insects protect themselves are numerous. Some form large webs under which many "worms" live together, others live in the interior of vegetable substances, and the skin of the fruit, or the cuticle of the leaf serves as a protection. Silk is the most common material used, and is spun into many forms. The bags of the Bag-worm are most conspicuous in the winter, when the foliage is not upon the trees. Many of these bags are empty, while others contain a number of soft yellow eggs. The empty bags are of the male insects, those with eggs were made by the females. A female bag is shown at *e*, with the cluster of eggs in the center. The eggs hatch in early summer, and produce brown worms, which at once surround themselves with a covering, or



DIFFERENT STATES OF THE BAG-WORM.

"bag" as it is termed, as at *g*. As the worms grow, the bags grow heavy and hang downward; when full-grown, they have the size, position, and general appearance as shown at *f*. Should the worm be pulled from its casement, it would appear as at *a*, the protected part of the body being reddish and soft, while the exposed portion is hard and dark-colored. The worms close their bags, and stop feeding for a few days, at four different times, for the purpose of casting their skins. At the close of the feeding season, they fasten their bags to twigs by a strong silken band, afterwards cover the interior with soft silk, turn with their heads towards the lower end, and become chrysalids. The form of the insect in this inactive state is shown at *b*. Three weeks after, the skin of the male chrysalis breaks, and the moth, *d*, escapes. The female, *c*, has no wings, and never leaves the shell until after depositing her eggs, when she drops exhausted to the ground. The bag-worm feeds upon many evergreen and deciduous trees. It is particularly fond of the Arbor Vitæ, and many complaints have come from its destructive work upon hedges of this evergreen. From a knowledge of the habits of this insect, it is obvious that by picking off and burning the bags in winter, the pest can be destroyed. This is quick work when the bags are few. The worms are so perfectly encased, that birds are not tempted to eat them, and the application of poison to trees and hedges, is not an easy matter.

Dakota Rocks and Crops.—"M. W. P.," Sioux Falls, sends us a specimen of Jasper Rock, the discovery of which excites much interest in the locality. The stone is known to geologists as "Jasper Rock," and is really a coarse kind of that red form of quartz, called Jasper. The value of the rock will depend upon the ease with which it may be quarried and converted into building stone. If in solid masses, like granite, its application will be limited. As it takes a fine polish, it will be useful for table-tops, mantel-pieces, monuments, etc. Our friend is in high glee over the crops, especially the potatoes, which, he says, is the largest ever raised. They fairly crack open the ground, and will yield from 200 to 300 bushels to the acre.

Bee Notes for November.

A subscriber asks if sugar can be safely fed to bees in winter. There is no other food so good for bees as pure sugar. The granulated form is best. All bee-keepers that have fed this sugar for winter stores are agreed that it is even superior to honey for bees. This is owing, doubtless, to its composition, as it contains more cane sugar, and also to the absence of pollen, which is to be found in all honey. While pollen generally does no harm to bees, in winter, it is not good in some cases and may be the cause of fatal dysentery. Dissolve the sugar for feeding in an equal bulk of water, and heat until it boils, and when cold it is ready to feed.

Bees in Winter Quarters.

It will be remembered that many bees were lost during the winter of 1880-81, from neglect. They were caught by the exceptionally early season. They need at least 30 pounds of good food per hive, and they should be crowded upon just enough frames to contain them, by using division boards. If the bees are to be packed, this should be done as early as October 1st, and if chaff hives are used, the packing above and at the ends of the frames should be added at the same time. It is always best to have the fine chaff or sawdust in sacks. However we winter, whether in chaff hives, or in the common hives with chaff packing, or in cellars, it will always pay to pack above and at the sides of the frames. The hives should be put into the cellar as early as November 1st, before the severe weather sets in. The hives should be dry when set in, and, in the removal, disturb the bees as little as possible. When in the cellar, remove the tops of the hives, but not the chaff pillow. The entrance should be left open.

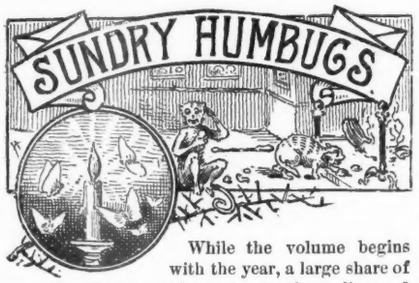
Shipping Queens.

It will be remembered that the shipping of queen bees by mail was prohibited by the Postal authorities until two years ago, when it was allowed, to the great advantage of bee-keepers. Thousands of queens are now yearly sent by mail, and at very small cost. A queen may be sent from Maine to California for two cents. In granting the request, two conditions were required. First, the food must be candy, or some substance that could not possibly soil the mail, and second, the cages should be so made that no mail agent could be stung. The last requisite is easily met in the double faced cages now universally used. The former was found more difficult. Candy is so dry that, if the bees are sent far, they are very apt to die. Small tin vials of water have been added, with a very small hole from which the bees can sip. This did not violate the spirit of the law, as there were but a few drops of water in the vial, and this could not leak out of the small hole. But this method was not wholly satisfactory. Too often the queens died, if sent long distances. Within the last year a food has been made that is every way satisfactory. Granulated sugar is covered with extracted honey and, after draining for two days, the sugar is packed into a hole in the cage. This does not soil the bees, is moist, and serves for the bees for many days, so that often, after a long journey by mail, there will not be a single worker bee dead in the cage.

The Surplus Honey.

Let all remember to keep their honey, whether extracted or comb, in a dry warm room. It is best

to keep the extracted honey in open vessels, and if to be shipped, in barrels or kegs, these latter should be coated inside with parafine, or beeswax. Let no one be in a hurry to sell his honey. It should be thoroughly graded before it is sent to market. No pains should be spared to have the honey look neat, which will largely increase the price it will bring. In some parts of the country, the crop has been very good, in many others it is a total failure. It is to be expected that good prices will prevail.



While the volume begins with the year, a large share of new subscribers come in some months earlier, and this seems a proper time to say a word about these columns and their objects. In the early years of the *American Agriculturist*, a fraudulent scheme was often exposed as "A Humbug." In the course of time, when it became necessary to group several such under one head, they were given as "Sundry Humbugs," the present convenient title.

Do not Give Your Signature.

The very first letter in our budget for this month has reference to note giving, but in this instance the note is given, knowing it to be a note. "J. H. P." writes us, from Darke County, Ohio, that his is an exclusively agricultural community, the farmers having large barns and broad-roofed houses, but as there are no coal mines they know little about gas and gas-tar. He says that parties come into a neighborhood proposing to paint the roofs of the farmers' barns and houses with a paint, the ingredients of which are described in technical terms, and referring to men who are seeking political popularity. Many agree to have their roofs painted in two coats at the rate of $1.50 per square (10 by 10 feet), a note for the amount to be given when one coat is applied. Mr. P. says that the men come, mount the roof, and that with their brushes they paint 64 squares in half a day. He states that this remarkable roof paint

Is Nothing but Coal-Tar,

a substance that he became familiar with elsewhere. Moreover, after putting on one coat, and getting the note, the "men are heard from no more, but the notes are." The nearest bank held them, and in due time called for payment. We doubt the propriety of coating roofs with coal-tar at all, but if one wishes to do so, he ought not to purchase it at an outrageous price, with a high-sounding name, as somebody's "Roof-Paint."

Fashions are said to move in cycles, and it would appear that humbugs revolve in a similar manner. Here turns up the antiquated

"Golden Butter Compound,"

with all the freshness of a novelty. We had not before seen it for several years; now a friend in Maryland has received a circular. We exposed this nonsense years ago, and now can only say—Don't....Nothing is more surprising to us than

Swindles in Silverware.

A friend in Kentucky who has received a remarkable circular from a Boston concern, is disposed to regard it as a humbug, but asks our opinion. If some one should offer our Kentuckian a lot of flour at one-half or one-quarter the market price, he would conclude either that the party had not paid for the flour or it must be of a very poor quality. These Boston folks offer for $3.25, silverware which they say is "usually sold for $8 to $12." Silverware, if "solid" has the value of its weight in coin, with the cost of manufacture added. If "plated," its value depends entirely upon the reputation of the maker. The body of the ware is of some cheap metal with a covering, or plating of silver. The plating may be thick enough to allow of several years' wear, or it may be a film so thin that its thickness (or thinness) can not be expressed. The good and the bad look alike; there is no way of knowing about plated-ware, save the word of the maker. As no one engaged in raising tobacco, wheat, or other staple ever, as a business, sells it for less than it is worth; our Kentucky friend may be sure silverware is no exception to the rule. If offered at half or quarter the usual price, it is doubtless so much the poorer. People in Massachusetts no more than in Kentucky, ever, as a matter of business, give more than a dollar's worth of silver-plate for a dollar.

Wonderful Cheap Guns.

There was a run of these wonderful things a few years ago, and aside from the fact that the "shooting irons" were worthless in themselves, those who sent their money did not get the trash that was offered. We call them "mongrel," for though "breech-loaders," those we have seen were made from some unsalable revolvers by adding a barrel at one end or a stock at the other, making a thing that was "neither fish, flesh, or good red herring." If one wants a good revolver, rifle, or shotgun, let him get one, but to buy these mongrel things is money thrown away. These so-called guns are now being offered, proposing to send for $6 or $7.50, a gun equal to those costing $100. They are advertised in much the same style as were those of a few years ago, and will no doubt subside as did their predecessors.

A Subscription Fraud—Look out for Him.

One of our subscribers at St. Thomas, Canada, writes us that a good looking man (they are always good looking and well dressed) with a wooden leg, is taking subscriptions for various newspapers and giving receipts for the same, signing the name of the firm or party publishing the paper. He is the worst kind of a swindler, besides being a forger, as the parties whose receipts were used by him say that the signature is a forgery, and that they employ no wooden-legged men or thieves in their business.

Annother Correspondent

writes us that he sent in response to a glowing New York City advertisement, $5 to pay for some of the goods advertised therein. He never received the goods, and wished us to look the parties up and get his money for him. He sent us an order on them for the amount, but he might as well have sent us a Deed for "Lots in the Moon," as we should have about as good a prospect of finding them, as of finding the firm he would have us look for. Moral.—Avoid all the flashy advertisements you see, as they are only a net spread to catch the unwary.

Still Another

complaint comes from Glens Falls in this State, and encloses an advertisement of a would-be Gent's Furnishing House, situated (or supposed to be) in the immediate neighborhood of this office. We would say to our friend that it is only an old swindle under a new name. There is no such store as the company advertise, and any one who sends to this man, whose name begins with R and is spelled with four syllables, $9 for six shirts and expects to receive them, will die of old age before they arrive.

Procuring Pensions.

The Fitzgeralds and the Fitzgeralds.

The following are among the communications received in response to our inquiries regarding the various branches of the Fitzgerald family, who advertise themselves as Pension Agents.

No. 1.—HONEST AND NOT CONNECTED WITH THE SHOPS OVER THE WAY.

N. W. Fitzgerald & Co., Attorneys and Counsellors at Law, and Solicitors of Claims and Patents, write us from Washington: "So far as this firm is concerned, we desire to inform you we have been engaged in Pension Business more or less since 1865... We have treated our clients fairly and justly, and we are willing they should testify....We are responsible for all our contracts; we pay our debts, and do as we would wish to be done by. We have no connection with any other person of this name in Washington, Ohio, Indiana, Kansas, or elsewhere; in all these places named are persons by this name who are doing Pension Business....The individual members of this firm are N. W. Fitzgerald and S. C. Fitzgerald....We hope this will be sufficient so far as this firm is concerned."

No. 2.—MONEY FOR POSTAGE STAMPS WANTED.

T. Lyman Newell writes from Russell, Lake Co., Ill., inclosing several documents from N. W. Fitzgerald, of Washington, D. C., and expressing himself in this wise:

"I read your remarks in the May number on the Fitzgeralds, and will send you papers I found laid away. After writing back and forth a short time, they wanted two dollars or more to pay postage and other small incidentals. I sent it, and here is their receipt. I never had another letter until this February, nearly two years, when they or he wrote me a lovely, a very kind letter, asking me for balance due, $8.00, and my claim should be prosecuted to the end to my satisfaction. Two dollars was enough for me. I received my pension more than a year ago from Mr. Bentley."

No. 3.—A "DEAD" REFERENCE.

Mr. R. Hunter writes from Bellwood, Blair Co., Penn., as follows:

"I wrote to P. H. Fitzgerald & Co., Claim Agents, at Indianapolis, and placed a pension claim in their hands. He wrote and wrote until I sent him $10.00, then he ceased to write. It was one year ago the 18th of this month. I have heard but once or twice from him. I have written to have my claim transferred, but have received no answer yet. I wrote to one of his references, but Fitzgerald 'lifted' the letter, and wrote back that the man was dead."

No. 4.—A CLERGYMAN SEEKING INFORMATION.

Rev. S. B. Nelson, Pastor of the Presbyterian Church at Waterloo, Nebraska, writes:

"I would like to have you inform me if Fitzgerald & Co., Pension Agents, of Washington, D. C., are reliable. I have been corresponding with them, and have some doubts that they are frauds."

No. 5.—PROMPT WORK WANTED.

John B. Gowdey, Redfield, Iowa, writes:

"I employed N. W. Fitzgerald & Co., of Washington, D. C., Lock Box 588, to get my pension increased. My understanding was that I was to pay $10.00 when that was accomplished. They first sent for 30 cents in stamps for postage, which I sent them; then they sent for $3.00 for incidentals—I sent that; then they sent for the other $7.00 if I wanted prompt work done. I wrote to them that I would pay the balance when my pension was increased. I have not heard from them since."

No. 6.—TAKING THE BREAD FROM HIS FAMILY'S MOUTH.

Uriah H. Owing, Kansas City, Mo., writes:

"I employed N. W. Fitzgerald & Co., Washington, D. C., two years ago. I paid him in advance to prosecute my claim to the final issue. I have the receipt for the money I paid him. When I first employed him it was N. W. Fitzgerald; now he puts it N. W. Fitzgerald & Co. I have almost taken the bread out of my family's mouth to pay him, and he will not answer any of my letters. I only hear from him through the advertisements in the paper. If you can do anything in finding out something about it for me, you shall be awarded. Please drop a poor Union soldier a few hints in regard to the matter. I send you one of his cards with his address."

No. 7.—SPEAKS FOR ITSELF.

"LANDSDOWNE FARM, LAWRENCE, Ind.

Editor American Agriculturist—DEAR SIR: In 'Sundry Humbugs' for May, I notice you ask for information in regard to the Fitzgeralds. I can give you some information in regard to P. H. of that tribe of Pension Agents who has lately moved from Indianapolis to Washington, D. C. I have taken occasion to call on the U. S. Attorney for this district, who cites me one case of his rascality, and referred me to the Prosecuting Attorney of Miami Co., Ohio, for others. The case that he knew of was this: Two swindlers sold a farmer a patent right for his county, and took his receipt for the churn or pump, or whatever it might be, which of course was a note for $700. Along comes P. H. Fitzgerald with the note, which the farmer refuses to pay. Luckily, the first party are caught in another act, and on the trial the evidence of collusion was so strong that Fitzgerald barely escaped the penitentiary. He has also been accused of extorting an illegal fee in pension cases. A. F. Broomhall, an attorney of Troy, Ohio, can give you a detailed account of his violations of law. I consider your 'Humbug' columns worth thousands of dollars to the farming community. Very truly yours, H. T. FLETCHER."

No. 8.—A DISGUSTED MEMBER OF COMPANY I.

"HUBBARDSTON, Michigan.

DEAR SIR:—About two years ago P. H. Fitzgerald & Co., of Indianapolis led me to believe that I was entitled to extra bounty, and forwarded to me papers to be made out, and to accompany which were required my discharge papers. After waiting until disgusted, I wrote them. Then they sent another set of meaningless papers (as I now believe) to be filled out and sworn to, which were doubtless intended to keep me quiet, as I requested the immediate return of my papers. Can any means be taken to recover them? A. V. PHISTER, Co. I, 3rd N. Y. Inf. and 195th N. Y. Inf."

Permanent Meadows, Seeding, Etc.

BY COL. F. D. CURTIS.

The grass crop is a most important one, though comparatively little pains is taken with it. It is generally put in as secondary to the grain crop, the land being prepared with reference to the latter. On this account much of the seed is lost, as the ground is usually rough and full of clods, which unfit it for the more delicate grass seeds. The system of manuring usually practised is not adapted to give the grass seed a vigorous start, a very important point, and without which very often a seeding fails. Unless the roots of both clover and timothy, and especially the latter, have a good hold in the soil, they are liable to dry up after the grain crop is removed, and if they survive this exposure, they are quite likely to be thrown out by the winter's freezing, or damaged during the ensuing season.

Rye and wheat being more open in their growth, and thereby admitting more light and moisture, are better adapted for seeding than any other grain. Barley is the next best grain to seed with, because of its similarity in growth to rye and wheat. Large areas are seeded with oats, which make such a dense growth that, if the grass seed grows at all, it is exceedingly weak in both stem and root. When the oats are removed, the scorching rays of the sun cause the surface of the earth to dry out rapidly.

The aggregate loss to farmers in seeding amounts to a large sum. If farmers would accept the conclusion that a good grass catch is just as important, if not more so, than a crop of oats, different results might be expected. Let the grass crop be made the primary one, and there would be a new basis which would change results. The land should also be prepared to meet the conditions of the grass seed. It must be made mellow on the surface, so that the delicate rootlets can readily penetrate into the soil. The manure should also be spread on the surface, and well mixed with the earth. It should be rotted so that this can be done thoroughly; or if in a green state, it should be free from coarse material, which is unfitted for fine seeds. Clear dung is specially suited to grass seeds, as it will retain moisture well, and has a lasting effect in the soil. I once seeded a portion of a field with clover where a liberal dressing of clear sheep manure was harrowed in, which strengthened the growth of the clover to such an extent, that it afforded a bountiful crop for years. At one time, not having manure enough to cover a field all over when it was sown with wheat, the unmanured portion was left until the early part of winter, and clear cow dung was drawn out and scattered on the snow over the wheat. The field was a side hill, but nevertheless the manure found its way to the roots of the wheat and grass, and a fine crop was harvested. This experiment disposed of the notion that manure on the surface of a side hill goes to waste, and also demonstrated the beneficial effects of surface manuring. This year, being the second cropping of clover and timothy on this land, it has produced four large loads to the acre, and bids fair to yield heavy succeeding crops. Too little grass seed is usually sown. A large amount is wasted by the rough and unsuitable manner in which the ground is prepared. This is one of the greatest drawbacks to success in seeding. The ground should be pulverized to a fine tilth, and, if necessary, the clods should be gathered up and removed from the land. There is an implement made especially to gather these clods into heaps, when they can be carted away to the barnyard or compost heap. A roller is a great friend to grass seed, and performs a necessary work to firm or press the ground into close contact with the seeds, making the plants less liable to be thrown out by freezing.

A Substantial Farm Gate.

Mr. John J. Springer, Rush Co., Ind., describes his farm gate as follows: "The sill *a*, figure 1, is an 8 by 8 piece of timber, 18 feet long, with mortises for the posts and braces. The posts, *b*, *c*, are 6 by 6 inches, and 6 feet long. The latch post has a "drop" cut in it for the latch. The sill rests upon two cross sills six feet long, placed a little to one side of the bottom of the posts. The gate posts are braced to those cross sills as shown in figure 2. This makes a stout and handy gate, that will not sag. The latch handle is so arranged that the gate may be opened by a person on horseback. The spring for the latch may be made of hickory or locust.

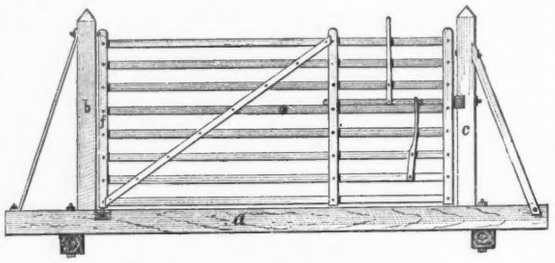


Fig. 1.—A WELL BUILT FARM GATE.

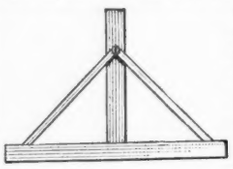


Fig. 2.—METHOD OF BRACING A GATE.

Saving Seed Pays.

There is money in it. We have proved the value of home-grown seeds for many years. Pedigree pays as well in seeds as it does in cattle, or in man. The only way to have a good pedigree, is to raise the seed yourself, or secure it from some neighbor or seedsman, who has a reputation to lose. If you are a careful cultivator and have cultivated a particular kind of field-corn for a dozen years or more, selecting the best ears from the most fruitful stalks, while they stood in the field, and kept the corn improving from year to year, you have corn with a pedigree, and it can hardly fail to give a better crop next year than any seed corn you can buy, far or near. Farmers are too apt to be careless in this matter, and wait until planting time before they secure their seed They then go to the nearest country store and take what they can get, not infrequently old seed papers mixed up with new. You will notice that packages of seed sold in such stores are seldom dated, so that the purchaser has no clew to their age, until he tests them in the field or garden, and finds them a fraud. The best season of planting most seeds is short, and great loss comes of using old seed, either by total failure of crop, or the increased labor of replanting. Ordinarily, a thrifty farmer can raise nearly all the seeds of the crops grown upon his farm and garden, cheaper than he can buy them, and of much better quality. This will be worth a good deal to him, not only in saving the outlay for seeds, but in the increased productiveness of the crops planted, and in the habits of close observation which it will secure for all other farm operations. In seed-growing, as in all other operations relating to cultivation, common sense must be used. Whoever grows four or six kinds of squashes or of melons in the same patch, should know that the seeds from these will be badly mixed. If used, the product may be of value, but the chances are that such seeds will bring a crop of mongrels not worth growing. In advising the raising of seeds, we also advise the use of proper caution. Those who closely observe, will see where they can avoid the admixture and secure a supply of seeds true to their kind. Growing seed that you are willing to plant yourself, and on which the profit of the year must depend, is an eye-opener, good for all cultivators. Therefore we exhort for the hundredth time, with all long-suffering and patience, grow your own seed and gather it in due season, label it with date, and store it for next spring's use. Failing in this, send to some reliable seedsman for a full assortment of whatever is lacking, and have it where you can put your hand on it by Jan. 1, 1883. It will pay large interest on the investment. C.

The Unnecessary Waste.

It is our custom to go twice or thrice a week through the streets in which the produce commission merchants mostly congregate. We do this that we may keep "the run of the market," and while we do not regularly report our visits, many hints are gathered which are ultimately useful to our readers. It is evident that many novices are sending their crops of vegetables and fruits to market. These unfortunates have not yet learned that to produce crops is one thing; to sell them is quite another thing, and a most important one, so far as their success is concerned. It makes one's heart sick to go through the markets and see the vast amount of stuff exposed that, instead of bringing the shipper any returns, cannot possibly pay its freight. Of course, these shippers will blame their commission man, and change to another, to meet with like results. Leaving out of question the crates of over-ripe cucumbers, partly decayed peas and string beans of the earlier season, which at their first arrival were only fit for the garbage dump. We notice a few things that were recently seen. The impression seems to be common with those who in more Southern localities send produce to market, that *anything* will sell in New York. While some few very early products may bring a high price, even when carelessly sent, there is no place where the *appearance* and condition of produce so much affects its sale as in New York. Unless one conforms to the customs in putting up and packing his produce, he had better keep it at home and feed it to the pigs. Lima Beans, for example, are sold in the

market mostly in the pods in bushel bags. Some of the market people occupy their leisure in shelling them, and offer them for sale in the shelled state. Some grower, who probably had seen the shelled beans on sale, had his shelled at home and sent to market! Such a sorry-looking, bruised lot they were! But from being so close together in a half-barrel, they had already begun to mould, when received. Although the commission men spread them to prevent heating and further moulding, it did no good, as they dried and shrivelled, and were only fit for the garbage dump. Tomatoes are often put into half-barrels or large boxes, in a condition fit for the kitchen. If they are not thrown out by the way, they are utterly useless when they reach the city; sent thus they only entail expense upon the raiser. Wherever one turns in the market, he sees waste, and cannot help a feeling of pity for those upon whom the loss must fall—the producers. If these producers had proper knowledge of their business, and a little common sense, this distressing exhibition of waste and loss at the markets would be avoided.

Ashes—Leached and Unleached.

Without going into a discussion of the composition of wood ashes, it is sufficient for us to remember that they consist of elements of the soil which were essential to the trees of which they formed a part, and that all our common farm crops draw from the soil the same elements in differing proportions. When we apply ashes to the soil we furnish the plants the very elements of food which they need in an easily accessible form. Ashes act promptly, and upon many soils their effects are perceptible for a long series of years. The more soluble parts of the ashes, especially the potash, act most promptly, while the less soluble parts continue to yield more or less nutriment as they are gradually dissolved.

The application of unleached ashes in large quantities upon light sandy or calcareous soils is not economical, because the soluble and most valuable parts are sure to be in part washed through the soil by rains and carried beyond the reach of the roots of the plants, whereas if applied in less quantities, the plant roots take what they can, a portion is retained by the soil, and a very small proportion is lost. On clayey soils, or on those which are rich in organic matter, heavy applications of 100 bushels per acre may be and are made.

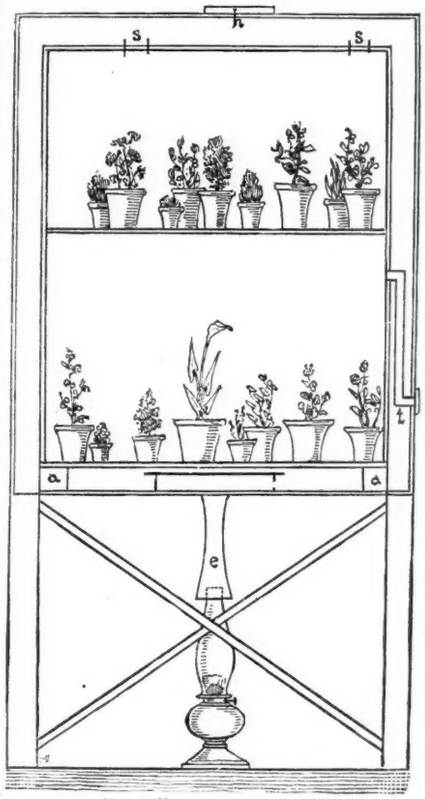
The crops most benefited by unleached ashes, besides grass and all fruit crops, are potatoes, root crops, and Indian corn, and to these crops it may be applied in the hill or drill at planting, or dropped by hand near and upon the plants soon after they come up. There is some danger of injury to the seed unless the distribution is very even, hence the surface application is usually preferred. Ashes work down in the soil. Rains wash down their most valuable constituents, and on their way they act favorably upon the soil, and come in contact with the roots of the plants. They should, therefore, always be applied upon or near the surface of the soil.

With leached ashes the case is different. The most soluble parts have already been washed out. They still contain, however, a notable and very variable quantity of potash, which soon makes its presence known, and as leached ashes are usually applied much more liberally than unleached, the response of crops is prompt and satisfactory. They may be economically used for the same crops. Upon grass they are spread as a top-dressing as evenly as possible at the rate of 50 to 100 bushels to the acre—less upon light soils than upon heavy. Unleached ashes are applied to grass and clover in about half the above quantities, namely, 25 or 30 bushels per acre upon sandy or light, loamy lands, and 50 bushels or more upon heavier soils.

When ashes are used upon any crop which occupies the land only one year, that crop, though greatly benefited, takes but a small part of the application. It should be followed by grass, clover, or by a succession of crops which will make use of this legacy of fertility.

A "Safe" to Keep Plants from Freezing.

"G," Morrisonville, Ill., in view of the frequent difficulty of preserving window plants during the severe winter nights, has contrived a "safe" in which they may be placed for protection. Our correspondent finds that in the "thin skinned" houses so many live in, it is too expensive to keep up coal fires all night for the sake of the plants, while by a proper arrangement for the use of a lamp as the source of heat, the cost is insignificant. He sends us the sketch given in the engraving, and describes it essentially as follows:



A "SAFE" FOR HOUSE PLANTS.

"This 'Plant Safe' is simply a box within a box, and may be of any desired size. It can be made ornamental, or of simply two common store boxes made tight with paper. The inside box rests on four blocks, the two in front being shown at *a*, *a*. There is an air space between the top and sides of the inner and outer boxes of three inches, and of about five at the bottom. A tin tube, *e*, is fitted in a hole in the middle of the bottom. Above this tube, about an inch and a half below the bottom of the inner box, is a piece of iron or tin-plate resting on four legs. This is to prevent the heat of the lamp from burning the wood. An opening, *h*, on the top of the safe, has a sliding cover, and acts as a chimney to create a draught. The front of the safe has two tight-fitting doors, not shown in the cut. They may be hinged or simply fitted in lid-fashion. To admit air to the plants, a tin tube, *t*, is used. It has a sliding cover over the outer end. This tube is kept warm by the heat in the air chamber, and slightly warms the air passing through it. Small holes at *s*, *s*, allow the air to pass out. The loose and open middle shelf permits free circulation inside. A little experience is necessary in managing this safe. Be careful not to turn on too much heat at first. On ordinarily cold nights a very small flame will prevent the plants from freezing. Extra cold spells may require the full flame, and but little air through tube *t*. Regulate the slide at *h* to correspond with the heat turned on. If the safe is very large, two lamps may be employed. A lamp supplies much heat, and you can *cook* the plants. The draught must be good to make the lamp burn well. It will not heat the safe with the opening, *h*, closed. If the plants have a wilted appearance it shows they need air, therefore admit more through the tube *t*. The safe may stand in a corner, out of the way. With careful management it will preserve plants perfectly through the coldest weather."

[We give the above as one method in which oil may be used as fuel to keep plants from freezing. Whoever makes a "safe" of this kind should take every precaution against accidents by fire. The tube, *e*, should not be in contact with the wood. When long exposed to an elevated temperature, wood becomes exceedingly inflammable. The safe when filled with plants will be very heavy, and should be supported on firm legs.—ED.]

Striking Cuttings in Water.

With reference to a note we published a few months ago on striking Camellia cuttings in water, M. Jean Sisley, Lyons, France, writes us in substance as follows: It is probable that a great many more shrubs may be propagated in this way than is generally supposed. I have in this manner propagated the Aucubas (Gold-leaf Plants) and Hortensias (garden Hydrangea) most easily and successfully. In autumn, when the wood begins to harden, I take the young top branches of the plant, with four or five leaves, and place about half a dozen cuttings in a glass filled with water. It is very easy to see when roots appear, and the cuttings require very little attention compared with those in pots, which must be regularly watered. While it is not required, the cuttings would root quicker with a slight amount of bottom-heat. With Camellias, I take cuttings of a single variety, cleft-graft it with a double kind, and place the whole in water as if it were a cutting. For this, bottom-heat, and a bell-glass are required. Propagating Camellias thus, saves a year.

Striking cuttings in water is but one remove from what is known as the "Saucer System." In that, short cuttings are thickly placed in a saucer of pure sand; this is exposed to full sunlight, and kept constantly very wet, a kind of sandy mud. Both this method and that with water alone offer an interesting field of experiment to the amateur.

Underdraining Dries Wet Land and Dampens Dry Land.

This may seem an absurd statement to many who have not read or thought upon the matter. Such will be interested in the following explanation. It is a scientific fact that in proportion as common air becomes warmer it absorbs water, and so combines with it as to cause the water to disappear and become insensible. Surround a room containing cold atmosphere with such tight walls or sheathing that there can be no ingress or egress of air. Now heat the air 20 or 30 degrees, or more, by steam or hot water pipes passing through the room, or by radiators, and it will become so dry and eager for more moisture that it will gather it from the surface of the body and from the lungs, giving one a disagreeable, parched sensation. If the room be closed when it is filled with *warm* air, as this cools down it will give out moisture before concealed, and everything in the room will become damp. On very cold days or nights, the inside air, cooled by the window glass, deposits so much moisture that it forms a film of ice, often amounting to a cake along the bottom of the panes. A tumbler or pitcher of ice-water cools the air in contact with its outer surface so much as to cause it to deposit a large amount of moisture upon the surface, giving it the appearance of sweating, though in fact no water passes from the inside to the outside. If a large amount of warm air, moving as wind, meets and mingles with a small current of cold air, the temperature of the whole is reduced, the concealed water is given out, the particles of watery vapors unite, and when enough of them get together to intercept the sunlight we have fogs and mist. The clouds do not come from any distant water depository, but are formed from the water in the previously clear atmosphere above us, but which was previously so combined with the air as to be entirely invisible.

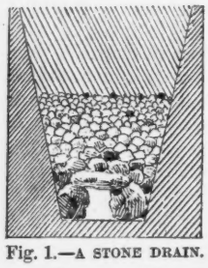


Fig. 1.—A STONE DRAIN.

Apply the above explanation to underdrains. After more rain falls than the ground can readily absorb, the excess settles into the drains and flows away, leaving the soil in a suitable condition for the roots of growing plants. But in a dry time, the air upon the surface is heated by the sun's rays that are absorbed by the top layer of soil. This heated air expands, and rises just as warm air rises from the heated stove. At the same time warm air enters the open ends of drains, passes along them, and constantly ascends through the soil to take the place of the heated air rising from the surface. But all the soil below an inch or two of the surface is cooler than the air that enters the pipes, and this being cooled deposits its previously concealed vapor, so that, in fact, it moistens the ground.

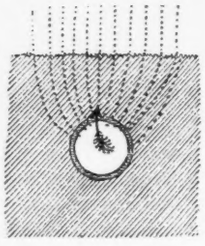


Fig. 2.—A PIPE DRAIN.

We can thus understand why underdraining not only carries off excess of water, but also dampens the soil when it is dry. Stirring a dry soil with hoes or cultivators in hot weather brings hot, moisture-laden air in contact with soil colder than itself, and it deposits moisture upon it.—Another important effect of such drains or air passages is that the air thus passing through the soil oxidizes portions of the plant food in it, both mineral and organic, and thus increasing the fertility. It also often destroys poisonous substances in the soil, like the proto-salts of iron which the access of air changes to the innocuous per-oxide.

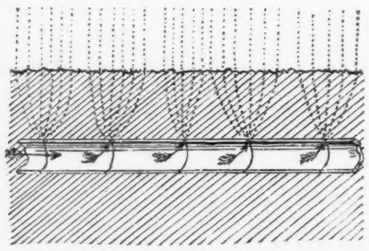


Fig. 3.—WARM AIR RISING FROM DRAIN PIPES.

Propagandism on the Farm.

The mutual aid secured by wisely conducted guilds and associations keeps alive the enthusiasm of the body, and makes more skillful mechanics and more successful professional men. There is a great deficiency of this kind of public spirit among the farming class, the most numerous and the most independent among our fifty millions of people. There is no jealousy of intrusion from outsiders, either from abroad or at home, among them. Farmers from Europe come by the ship-load, some of them with large capital, and there are no fences put up around the farms or prairies, to prevent professional men, mechanics, young men from all classes at home, from becoming farmers. Excepting the work of speculators in our large cities, there is nothing to create an artificial price for the products of the farm. There is a fair field for the industry and skillful labor of every cultivator. There is perhaps no calling in which industry and educated brain power has a fairer reward than in husbandry. Better farmers are the great want of our calling in all parts of our country, and there ought to be public spirit enough in the body to secure a wiser direction and better reward of the manual labor on our farms. Much has been accomplished in the last thirty years, and in some sections we find, at intervals, intelligent husbandry, and ample rewards. But much more remains to be done, so that the industry of the farm in every section may be more uniformly rewarded. There are many forces now at work that may be greatly helped and intensified by the farmers themselves. Farmers' clubs have done much in the very limited districts where they have been kept up to aid good husbandry. With a few intelligent cultivators for leaders, a club can be organized in almost every township in the older States. Farmers' wives and daughters can be made very efficient helpers in the management of these institutions, and the social ends to be gained by them are hardly less important than the improvement of husbandry. The State, county, and local agricultural societies, with their annual exhibitions, are important factors in this good work, in spite of their occasional perversion to horse-racing and gambling. Good citizens should see that these evils are eliminated from the fairs. The agricultural schools and colleges are winning their way to popular favor, and correcting the once common prejudice against book farming. The belief is now quite common in our halls of legislation that educated brains have a fair field upon the farm, and it is possible to get State aid for Agricultural Schools and Experiment Stations. Reliable manures are in the market that bear the test of the laboratory and the soil. Last, but not least among these forces, is the agricultural press. Every man who reads and profits by a good journal should see that his neighbors share his blessing. There is no easier, more effective way of illustrating the propagandism of the farm.

Keeping Squashes and Sweet Potatoes.

While most of the products of the garden, the common roots, celery, cabbages, etc., need to be kept at a low temperature during winter, these tropical plants, the Squash and Sweet Potato, would perish under like conditions. In the harvesting, and in all subsequent handling, Sweet Potatoes and Squashes should be treated as carefully as if they were choice fruit, as a bruise will cause decay. Those who raise either largely for market, have a proper place for their storage, usually a building fitted for the purpose. This building has a stove by which the temperature can be kept constantly at 60°. Squashes are placed upon shelves, so arranged, that they may be readily inspected, and any that show signs of decay removed before they infect others. Sweet Potatoes are stored in bins holding a few barrels each, and so placed that air can freely circulate among them. Provision in both houses is made for ventilation when needed. Those who have only small crops can not have special buildings, but may preserve them by imitating the same conditions. The best success we ever had with small lots of Sweet Potatoes was to put them in such boxes as were at hand; these were placed under the kitchen table, or in other available parts of the room and, as an experiment, a part of them were kept until spring. We have also had excellent results with Squashes by placing those to be kept the longest upon the top shelves of a warm kitchen closet. A cellar, unless very warm and dry, is a poor place for Squashes. Place them elsewhere when you can do so.

Evergreens for Hedges.—Several have inquired about these. The usual method is, in localities where they are abundant, to collect the natural seedlings from the woods. Indeed, some nurserymen send to a distance for the seedlings, finding it cheaper to do this than to raise them from the seed. The kinds principally used for hedges are Arbor Vitæ and Hemlock. Young plants of these, about a foot high, are gathered in spring. They are set closely in nursery rows, and shaded by a temporary screen or shelter covered with brush. Some will die, but those which survive the first summer may be set in the hedge row with prospect of success.

THE DOG AND HIS RABBIT.—*Engraved for the American Agriculturist.*

Few have time to acquire such skill with the gun as to readily bring down the whirring partridge, or the deftly darting woodcock. Every farmer's boy, however, can bag his rabbit after a moderate amount of practice. And it is indeed most exhilarating sport as the fleet-footed little creature, suddenly startled from a brush-heap covert, clears the ground at ten-feet leaps, and closely followed by the dog, gradually enlarges his circle until the fatal shot has stopped his course. Though so innocent in appearance, so graceful in movement, the rabbit destroys your trees and vegetation, and is legitimate game for the gunner's bag. Let the lad who has toiled hard during seed time and harvest have his day of sport. Buy him a valuable dog like the one, for example, in the engraving, which will retrieve the game and be his companion through field and thicket, adding to the excitement and enjoyment of the hunt. Your boy won't leave you for town or city if you will study his enjoyment somewhat in this and other ways. Give him dog and gun and fishing tackle, while your daughter has her bow and target, her croquet and lawn tennis. Is it surprising that the farm boy or farm girl tires of monotonous life, and craves another, when the city cousin comes laden with these means of enjoyment? How well we recall our boyish longings for a dog! "It would not answer," father said, "to have one on the place; he would do more harm than good." But when, after much entreaty, Rover came, how our young heart bounded, and how cheerfully and cheerily with our new friend and companion we went down the long lane into the clearing, and brought the cows home that night. It costs as much to feed a blooded dog as a cur; so purchase a good animal while you are about it for the boy—useful and ornamental.

A Maryland Corn House.

"Young Farmer," Glendale, Md., writes us: "Enclosed find a drawing of a corn crib that I think is the best I ever saw. It is 15 by 20 feet, with 8-foot posts, set 2 feet above the ground, on dressed stones or posts, with tin around them to prevent the rats and mice from getting in. The sills are 8 by 8; plates,

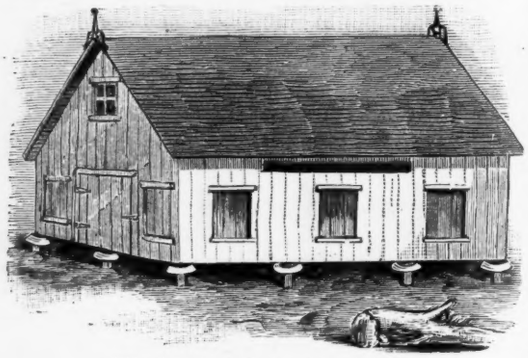


Fig. 1.—EXTERIOR OF CORN HOUSE.

6 by 6, well framed and braced. The main door is at one end. The shelling floor, 6 by 20 feet, is in the middle, with the corn bins, 4½ by 20 feet, on the sides. The bins have slatted bottoms and partitions. Boxes for removing the corn at the bottom of the bins, are made by setting a board up edgewise, one foot from the partition, and securing it firmly by end pieces. There are no slats on the partition back of this board for 15 inches

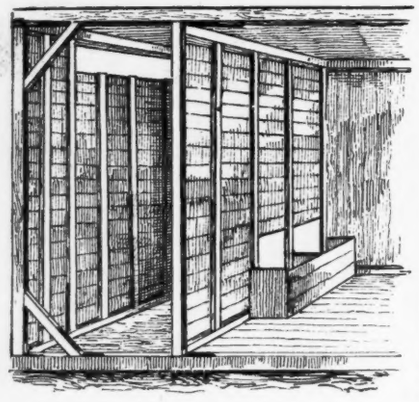


Fig. 2.—INTERIOR VIEW OF CORN HOUSE.

from the floor, and the corn flows down as fast as taken out."—The exterior of the corn house is seen in figure 1, and the interior view is given in figure 2, in which the form and position of the corn box is shown. A door 1⅓ by 10 feet is on each side above the bins, through which the corn is shovelled into the corn house. These doors open outward, and are fastened inside with hooks and staples. The entrance to each crib, or corn bin, is at the end, and is closed with loose slats as the bin is filled. There is no loft or stairs in this corn house, the upper part being open for the free circulation of air.

Cotton and Electricity.—The Secretary of the Cotton Exchange, Vicksburg, Miss., writes us that Dr. L. E. Nagle, of that city, suggests the use of electric light to aid in suppressing the Cotton-worm. The parent moth is readily attracted by lights, and he thinks that the powerful electric light may be made the agent to destroy vast numbers of them. Our correspondent says that the idea has been favorably received, and that it will probably be put to a practical test.

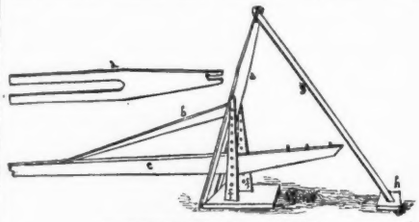
Preserving Roots for Daily Use.

Since heating houses by furnaces in the cellar has become common, the cellar is usually too warm and dry for the proper keeping of roots. It is not desirable under any circumstances to use the cellar of the dwelling for storing large quantities of roots. If such a mass of vegetable matter has any effect upon the atmosphere of the house, it must be unfavorable, and this is certain if decay takes place, while the odor is often unpleasant. Roots in small quantities, to be at hand when wanted in the kitchen, may be packed in barrels or boxes in sand, and covered with it, or with sun dried earth. This will avoid unpleasant odors, and prevent the roots from shrivelling, but if the cellar is warm, growth is likely to commence, to the injury of the quality of the roots. Still, by bringing in from the general root-cellar or covered heaps, only moderate quantities at a time, this trouble may be avoided. Farmers may sometimes find the market gardener's method useful. A trench is dug in a place naturally well drained, or when it can be made dry by draining. This trench is dug three or four feet deep, about six feet wide, and as long as needed. The roots are then packed up across the pit, in a section about two feet long; then another section is built about six inches from the first, and the space between the two is filled with soil. The sections of roots are continued up to the top of the trench, and when it is finished, there will be a series of small filled pits, two feet long, separated by narrow walls of earth six inches thick. The roots are finally covered with about two feet of soil, finished so as to best shed water. The great advantage of such trenches over the usual large pits is in allowing a few barrels of roots to be taken out at a time, without disturbing the rest. We have known small quantities of them to be preserved in little root-cellars, made by sinking barrels or casks in the ground, in a place convenient to the kitchen. These should be provided with covers, and some boards laid over the top of the barrels will facilitate clearing off the snow.

Raising Potatoes from Sprouts.—"G. R. B.," Woonsocket, R. I., sends us a quotation from an English paper which describes the growing of potatoes from sprouts as an experiment "just completed in England." Mr. B. says this method of growing potatoes has been practised for years on his father's farm, where more acres of all the leading varieties are planted each spring from the sprouts ordinarily thrown away, than with the tuber. The yield from sprouts is quite up to that from whole or cut seed, and the product clean and smooth. The sprouts, which are produced by potatoes in a warm cellar in spring, from an inch to a foot in length, are dropped and covered the same as a potato. He takes care to have the tops of sprouts just above the surface, though he thinks that if completely buried, they will come up. We are surprised that the *Agricultural Gazette* (Eng.) should find this a novel method, as it has long been in use in parts of England. Where it is desirable to make the most of a scarce variety of potatoes, the sprouts are encouraged, and cut up to make a plant of each joint, as if it were a Dahlia.

A Log Lifter.

We have this description and illustration of a "log lift" from Mr. J. M. DeFord, Mercer Co., Ohio. He writes: I have, in sawing railroad ties, etc., found that the saw would be pinched so much that it was difficult to move it. To avoid this I invented a 'lift,' which proves just the thing desired. The piece, *a*, is 4 feet long, 6 inches wide, and 1 inch thick; *b*, 3 feet long; *c*, 6 feet long; *f*, *f*, 20 inches long; *g*, 4½ feet. The posts are put together as shown in the sketch. Place the 'lift' above the log, where it is to be secured. Adjust the lever, *c*, and with the weight of the body bring the log to the desired hight, and hold it there by slipping the end of the ratchet, *b*, in one of the notches on the upper side of the lever. The weight of the log on the lever will cause the 'lift' to tip up. The

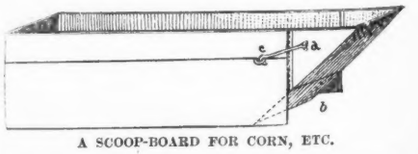


A CONVENIENT LOG LIFTER.

arm, *g*, prevents this if carefully adjusted before the log is raised. The foot, *h*, on the arm should be fastened on loosely so that it will accommodate itself to the ground. The arm should be allowed to extend 3 or 4 inches below the foot, and made sharp so that it may sink in the ground and prevent slipping.

A Scoop-Board for a Wagon Box.

Mr. G. W. Barclay, Cedar Co., Iowa, writes us: "I find the *American Agriculturist* an invaluable guide and adviser in all things pertaining to the farm. Each number contains something worth as much as the whole year's subscription."—Mr. B. sends a sketch of a scoop-board to be attached to the rear end of the wagon-box, to aid in unloading corn in the ear, potatoes, coal, etc. The dotted line *a*, shows the position of the end-board; *b*, bottom of the scoop-board; *c*, hook and two eye-bolts. The hook is made of ⅜-inch round iron, 2½ feet long, and supports the scoop-board, as shown in the engraving. The

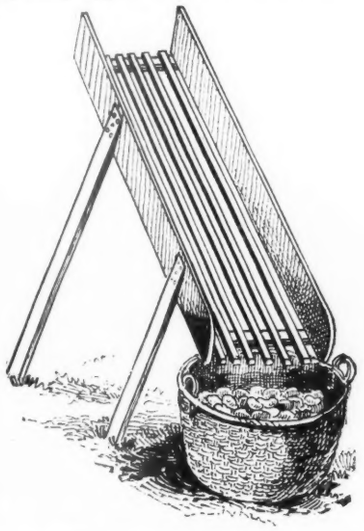


A SCOOP-BOARD FOR CORN, ETC.

side of the scoop-board, *a*, is of the same length as the bottom, which extends into the wagon-bed. Oak or other hard-wood slats are securely bolted or riveted to each side of the scoop-board, to fit into the grooves of the end-boards. In this arrangement there is no loss in the capacity of the wagon-box, and a right or left-handed person can use it equally well.

A Cheap Potato Screen.

Sorting potatoes by hand is tedious, and the adhesive earth remains. With a very simple, cheap apparatus, shown in the engraving, the small potatoes are quickly separated from the larger ones, suitable for the market. It consists of a slatted trough, 5 or 6 feet long, provided with legs or standards of proper length, to keep it so inclined that when potatoes are shovelled upon the screen, they will roll down. The slats may be of inch stuff, attached to the two bottom cleats—their centers 1½ inch apart, a little closer at the top, and a trifle further separated at the bottom, so that the potatoes may not become wedged in the spaces. A suitable width for the screen is 20 inches, with side boards 8 inches high. When unloading potatoes from the wagon, place the screen at the side or rear, and shovel them directly upon it. Those of suitable size will run into the basket, while the smaller ones, with the earth, little stones, etc., will fall upon the ground or into any receptacle placed to receive them.



A SCREEN FOR POTATOES.

A Mixture of Grasses.

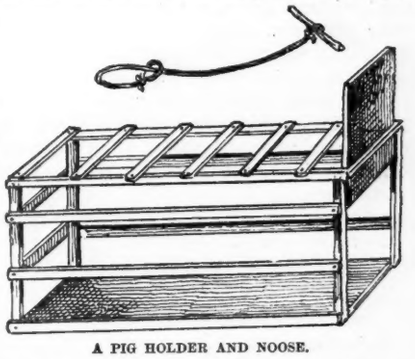
Our grass lands are often less productive than they might be if a larger number of species were grown together. By examining an old pasture or meadow sod, a variety of grasses and other plants will be found, all contesting for the possession of the land. This is the result of natural sowing, and indicates the utility of mixed seeding. It is well known that mixed crops are usually more productive than single ones. Thus an acre of peas and oats grown together will yield much more than a half acre of each sown singly. Ground seeded to timothy and clover will produce nearly twice as much as when either is grown by itself. The periods of greatest vigor in different grasses do not come at the same time, so that in mixed seeding there is a succession of herbage and a continuous demand for the plant food made available from day to day. Thus a pasture sod composed of a mixture of orchard grass, timothy, Kentucky blue-grass, and red clover, will be in good grazing condition from early spring until late autumn. The orchard grass makes a fine April pasture, and the blue-grass is at its full vigor in October, while the clover and timothy, in the order named, fill the gap between the early and late grasses. The American farmer has much to learn from the English, in the making of permanent and profitable pastures. Some of the English catalogues of agricultural seeds offer no less than a score of different mixtures for seeding to grass on various soils, with the name and quantity of each sort to be used. Some lists contain 25 different kinds of grasses, clovers, and other forage plants. With us, the list is not often longer than timothy, red top, and clover, and more frequently only a single sort is sown. A field thus seeded is kept in pasture or meadow for only a short term of years before it gets foul with weeds, or ceases to be profitable, when it is plowed up and sown to grain. We are in great need of good strong pastures that, with top-dressing from year to year, may be both permanent and profitable, and that may be depended upon to produce a good supply of herbage throughout the growing season. In such pastures there should be tall grasses, with those that will do well when over-shadowed; those that are early to start, and those that grow until the close of the season; those for a wet season mixed with sorts that do well in a time of drouth. Here is a good field for the experimenters to find what mixtures of grass are best for various soils at our various stations, localities, and climates.

Deserted Homesteads.

In the north-east quarter of a Connecticut town, not far from our residence, there are many deserted homesteads, dwelling houses with doors and windows gone, chimney stacks still standing, or partially fallen, gaunt cellar walls, where the Nettle and Blackberry flourish. There are yards, where the lilacs and lilies still bloom, and old apple and pear trees remind us of the culture and thrift that have vanished. These old homesteads are generally upon the hills, and in the stony portions of the town, where cultivation always must have been difficult, and industry meagrely rewarded. They are usually pictures of desolation, where the rank growth of wood has not had time to obscure the old landmarks. This district is a type of very many of the agricultural towns of New England. The census shows a loss of population, but not probably a loss of productiveness or of wealth. The outlook for these towns is by no means so discouraging as would appear to the careless observer. They prove that a great change has come over our husbandry, and indicate possibly a still greater change in the future. The people who cultivated these homesteads, reared large families, and gained a comfortable subsistence upon them, all belonged to the age of home-spun, which closed nearly fifty years ago. The old spinning wheels and looms that lumber the garrets, and occasionally find their way into antiquarian exhibitions, are vivid remembrances of this vanished age. Almost every thing the family consumed was raised and manufactured on the farm. The wearing apparel of men and women, the bed linen and the stockings, were spun, woven and knit by the mothers and daughters. The village hatter made the hats, and was paid in the products of the farm. A circulating cobbler made an annual visit, and furnished the shoes. Other mechanics were mainly paid in barter. Whatever else was needed of foreign products at the country store—tea, coffee, sugar, pipes and tobacco—was paid for mainly in dairy products and eggs, and the wife was expected to keep this department clear of debt. There were few luxuries upon the tables, and few of the comforts that are now to be found in almost every thrifty farmer's home. There was a lamentable dearth of books and papers, no pianos, parlor organs, or melodeons, and the furniture, still extant in some of these old homes, was of the plainest sort. There was very little money in circulation and the want of it was not seriously felt by people whose tastes were adjusted to their circumstances. Farmers with modern tastes and education could not support their families on these rough acres, and for that reason have sold out, gone West, to the cities, or into other employments. The land has passed into the hands of neighboring farmers, who occupy farms more easily tilled. Some of it is used for pasture, but the larger part has gone, and is going more and more to wood, which is on the increase in nearly all these districts. The remaining farmers on the better land, have all the advantages of improved machinery to cultivate their crops, and gather their harvests, and the value of these crops, in almost every town, is greater than it was fifty or a hundred years ago. By the increase of the population and wealth in the neighboring cities and villages, the local markets have been vastly improved, and the farmer has a ready sale for every thing he can raise. Animal products sell at three and four times the prices they brought fifty years ago. The old homestead may have gone to forest and pasture, but the State has doubled its population, and tenfolded its wealth.

A Pig Box and Holder.

Mr. W. A. Gregg, Grant Co., Ind., sends us a sketch and description of a device for holding pigs while ringing them. The box should be 3½ or 4 feet long, 2½ feet high, and 20 inches broad inside, large enough to hold the largest hog, and yet not so wide that small hogs can turn around in it. The posts are 2 inches square; the end, side, and top, slats 2½ inches wide, 1 inch thick. The bottom is made tight with inch plank. The hog may easily be driven or led into the box by putting it close up to the door of the pen. When in, let down a perpendicular board behind the pig, between the slats, and the most vicious hog is as helpless as a child. Take four feet of common clothes line, tie a two-inch loop at one end, pass the other end through this loop until a second loop 12 or 15 inches long is formed. Tie a short stick to the opposite end of the rope to assist in holding. Let the



A PIG HOLDER AND NOOSE.

loop down between the top slats, just over the hog's head, and with a stick put one side of the loop into his mouth, getting it above the tusks. Draw the snout up and out between the top slats, and hold it firmly against the slat, insert the ring, loosen the rope, raise the board, when the animal will back out, and the box will be ready for another.

Is the Pig a Nuisance?

Is the pig a nuisance in the village? He is, and he is not, just as he is managed. On the farm, he has his place yet, as an indispensible worker, and cheap source of food and fertilizers. But in the village, where esthetics sometimes interfere with profits, people are getting fastidious, and avoid the pig pen as a nuisance. It would be a nuisance perhaps, under the eaves of the dwelling, managed in almost any way. But at the back end of the village lot, where the barn, if there is one, is located, there the sty may be safely placed without offence to eye, ear, or nostril, and with decided profit. It is the cheapest source of good pork, ham, shoulder, sausage, head-cheese, and lard, that a villager can have. As a manufacturer of fertilizers for the village garden, the pig can not be beaten. He turns every weed, sod, vegetable, fruit, and all kitchen waste into gold. "Ah! but he squeals!" Then feed him more, and he will be quiet as a lamb, all day and all night. "Ah! but the pen is unsightly!" That is your fault, not his. Even the sty has its esthetics, and it may be made "a thing of beauty and a joy forever" if you like. "Well, he smells badly, any way." No, sir. Not if you take proper care of him. Give him a sheltered bower for his nest, and plenty of straw or leaves, and he will keep his bed as clean as a parlor. Give him plenty of muck or peat, garden soil, head lands, or absorbents of any kind, and he will so thoroughly observe the Mosaic law in regard to animal wastes, that no neighbor of yours shall mistrust that a pig is within a mile of your premises. The health committee of the village will never smell you out, or enter complaint against your sty. Do not lay your sins of omission at the door of the dumb beast. He has his esthetic side, and only requires a fair share of attention to be made ornamental, as well as useful. Please take particular notice that we raise our own pork, eat home-cured hams, and know the woman who makes our sausage meat.

Levels and Leveling.

It is often desirable to determine levels, as, for instance, to know which way a field slopes, or the level of a spring which may be conducted to a neighboring pasture if its elevation is sufficient, etc. For such purposes we may sight across a carpenter's spirit-level, if one is at hand, or set an iron square by a plumb line held against its downward arm, or even use a surveyor's compass, or a clinometer, always provided you have one. But, with only a string and a jack-knife, what are you going to do? Set up a tripod made of three forked sticks, as shown in fig. 1, and tie them if necessary. Cut a long slender wand, and after beating it to flexibility, bend it into a hoop (fig. 2.) To one side tie a string with a loop, in all a foot or more in length, and to the opposite side, attach a stone as large as two fists. Suspend the hoop by the loop slipped over one of the forks, so that it will hang in the middle under the tripod, fig. 3. When the hoop hangs perfectly plumb and still, the twist being out of the strings, set two pins at opposite sides of the hoop, as at *a* and *b*, as nearly level as possible. (They may be dress pins or thorns.) Now, arresting any tendency to twirl by holding a twig or pencil against the hoop when it is at rest, sight across the pins, say from *a* to *b*, at some object in the distance, then turn the hoop around and sight from *b* to *a*. If the same object falls in the line of vision, the points *a*, and *b*, are level, if not, either one or the other may be shifted; or one of the strings may be slipped a little, one way or the other. Test the level again, and when the same object comes in line, looking from *a* to *b*, and *b* to *a*, after turning the hoop, the line is accurately horizontal: The instrument has to be tested every time it is set up, if only carried a few rods, but any man or boy who can sight across a fowling piece, can get useful results, approximating to correctness with this device.

Fig. 1.—TOP OF TRIPOD.

Fig. 2.—THE WAND-HOOP.

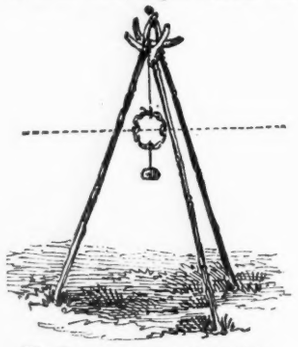


Fig. 3.—THE LEVEL COMPLETE.

Tile Draining.—Do not forget that swales, swamps, and any wet land with hard pan near the surface, pays very small interest, if any, in their present condition. If drained three feet deep with tile, they will pay a very large interest on the original cost, and on the drainage besides. It is not unusual to get back the cost of drainage in two crops, after the tiles are laid. Where tiles can be had near, or at a cost for freight, not exceeding their price at the kiln, it is cheaper to drain with tile than with stone. If tiles are not available, and stones are upon the ground, use these. Draining will open a new world to the farmer who has never tried it. Put down the "crockery" this fall, and make your capital in land draw a good interest.

Protect the Manure.

An English farmer on using, for the first time, manure that had been made under cover, had his crops ruined by luxuriant growth. He used the same amount as he was accustomed to of the open-yard manure, and the grain was lodged before it was ready to harvest. This is a strong argument in favor of a protection for manure. On most soils it is very important to have it well decomposed, so that the plants may obtain an abundant supply of food from it at once; but during the fermentation process, to render its insoluble compounds available, serious losses of fertilizing materials are very often sustained. If the fermentation of the heap is rapid, there is danger of losing the very valuable nitrogen as volatile ammonia, which, passing into the air, is as likely to aid a neighbor's crop as our own. On the other hand, decomposition may go on so slowly that the manure is unfit for immediate use when wanted. It is no easy matter to conduct the decomposition so that the most good manure may be made with the least loss. It is, however, demonstrated that hot sun, winds, and rains, are to be kept from the heap, and that is, the best manure is made under cover. A method of box-feeding has been adopted by many, which allows the manure to accumulate under the animals for months. It is found that this system does not imply offensive stalls, and that there is little loss of nitrogen—the element of greatest value, and most likely to escape. It is only necessary to use enough litter to absorb all the liquids. Covered yards would secure much the same conditions for the manure by protecting it from the drenching rains, and the exclusion of air by compact treading, which prevents a too hasty fermentation. It is certainly worth while for every farmer who contemplates the use of commercial fertilizers, to see that he is making the most of the manure which his animals are giving him daily. Preserve and protect it diligently.

Confining a Cow's Switch at Milking.—Most milkers are acquainted with the annoyance of the cow's switch while milking, which is intolerable in dog days, and a serious inconvenience even when there are no flies to be scared away. Not only are the sides of the animal perpetually lashed, but the face and eyes of the milker, and the milking is seriously interrupted. Had the animal been trained to the work, she could not plump her switch more accurately into the middle of the milk pail, which contaminates the butter, and sours the temper of the dairy maid. Various devices are resorted to, to abate this nuisance, with partial success. Tying the switch around the leg answers well, but there is loss of time in the tying, and untying, though we use a portion of the switch for the fastening. A long loop of rope thrown over the hip-joints, and falling

down to the level of the udder behind, will restrain the switching, but it takes time and labor to care for the rope. If the milker, after he is seated upon the stool, will place the switch of the cow upon his left knee, and use his left elbow as a weight, he will have complete control of the missile that annoys him, without interfering with his freedom in milking. This device is not patented!

Breeding for Eggs.

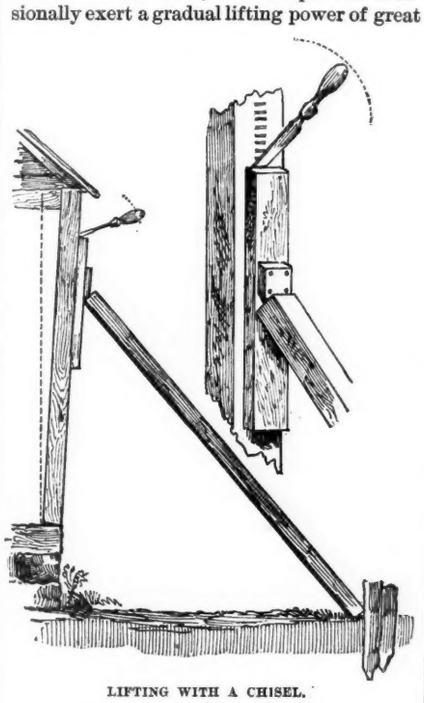
BY D. Z. EVANS, JR.

Aside from breeding poultry "to feather," to be sold as high class thorough-bred fowls at high prices, there is more profit in breeding poultry for eggs than for flesh. This is especially true for those near large cities, where buyers are willing to pay roundly for really fresh eggs. The prices for such eggs are from ten to thirty per cent higher than the regular market rates; and where the producer can meet the consumer, deliver the eggs, and collect the cash himself, without any expense for transportation, commission, etc., the profits are correspondingly large, and the risks of loss reduced to the minimum. There are multitudes who have large plots of ground not far from town, who could materially increase their incomes by keeping fair-sized flocks of good laying hens, and without requiring much time from their regular business. It is not good policy, however, either to keep too many birds on a single place, or to attempt to make a living entirely from poultry, without having considerable experience in breeding profitably for market, and even then it is not wise to give up a comfortable salary to go into breeding poultry extensively. The best way is to "make haste slowly." The flocks can be increased with experience, until it is proved beyond a doubt that enough can be made from the poultry to warrant an entire dependence upon them for a living. This is the true way, not only with poultry, but in any calling, where work must take the place of cash, in part at least.

The profits in poultry depend mainly upon the buildings in which the fowls spend much of their time. The high prices eggs command during the winter months, and in fact all through the cold weather of late fall and early spring, make it an object to get as many eggs as possible during those times by care and good feeding. Good hens will lay just as well at such times, if the necessary food and warmth is insured. Elaborate and expensive houses for poultry are not necessary. All desirable and practical purposes are served by making them of common, rough inch pine boards. These can be jointed on the edges, so as to fit up tightly, with strips nailed on the joints, outside. Upon the entire inside surface put the common roofing felt, which will make a wind and rain-proof finish, and will go far towards insuring freedom from lice, mites, and other insect enemies; the tar in the felting is decidedly unpleasant to the parasites. If there is some near-by building, such as a barn, granary, or shed, the poultry house can be built against it as a back, and thus serve a material saving in lumber and work. The roof can be treated, outside and in, with the same felt covering, which will make it rain-proof. The floor can be made of earth, raised a few inches above the outside soil, so as to insure freedom from dampness and save the expense of floor lumber. A ground floor has another decided advantage over boards, in that it is more healthful and does not engender ailments of the feet, which are often caused by running constantly on hard floors. For ordinary houses, 6 to 8 feet high in front, 4 to 6 feet at the back, and 8 to 10 feet wide, and as long as is necessary, will be found the most suitable, and this will generally cut the boards to the best advantage. When short pieces of boards are left over, they can be used for making the nesting boxes, coops, etc., etc., and nothing need be wasted. For very cold localities, or extreme weather, arrange for having a small coal stove in the house. A half a ton of coal will last an entire season, as it is necessary to have but little fire at any time, merely enough to prevent frost. A wood fire is dangerous, irregular, and requires too much attention.

The Chisel "Jack."

"Jack" is a convenient name for sundry lifting contrivances, combinations of levers, or a screw and lever, etc. Carpenters occasionally exert a gradual lifting power of great



LIFTING WITH A CHISEL.

force, and perfectly controlled, by using a common chisel, which for convenience we denominate a "chisel-jack." It is used in some such way as this. Suppose some building has a "cant" out of the perpendicular. A stout beam is selected, reaching at a proper slant from a point high up upon a post of the building to the ground, where a stake is driven down solidly. If the soil is yielding, two or three stakes will probably make a solid bearing. A piece of sound plank is put under its upper end, where the beam presses against the building, and upon this plank a cleat is nailed, for the end of the beam to bear against. This is all, unless, to avoid defacing the building, another plank or board, longer than the other, is placed between the building and the pressing plank. The edge of a strong chisel is now placed, and shoved strongly as far as possible under the end of the plank as shown, and the handle is then moved through the arc, as indicated by the dotted line. This will shove the plank downward, and exert a strong lateral thrust against the building, which it will gradually straighten. By a little contrivance this power may be exerted in many different ways and directions, with most satisfactory results. In this case, the only defacing of the building is by the marks of the chisel, as indicated by the drawing, and this might have been avoided by using a second plank.

Giving Medicines to Animals.

BY PROF. D. D. SLADE, HARVARD UNIVERSITY.

In administering medicines to his animals, the knowledge of how to do it is most essential to every farmer, and he may not be able to always acquire it from his books at hand. The most ready manner of giving medicinal substances is by mixing them with the food or drink. This, however, is not always practicable, as the animal may refuse the mixture, or may be too weak to make the effort to take it. It must then be given by ball, or by drench from a horn or bottle. One most essential anatomical point to be remembered by every one in the giving of medicine, especially in the liquid form, is, that the tongue should be free. It is mainly by the muscular movements of this organ that the entrance to the windpipe is closed during the passage of food or liquid into the gullet. The introduction of the smallest quantity into the air passages, at once causes intense irritation, made evident by coughing. By preventing natural movements of the tongue, we run much risk of producing suffocation. To illustrate: An ox, after eating heartily, and drinking late in the morning, was puffed up, the swelling disappearing after work. On again drinking at night, the swelling returned. Some medicine was prepared, but the swelling had abated, and the animal was eating hay. But to prevent a recurrence of the disorder, the medicine was given by holding his tongue out of his mouth while pouring it down his throat. He fell down and died immediately. On examination, eight inches of the windpipe was completely filled with chewed hay, conveyed there by the liquid, and strangulation was produced.

When practicable, the ball is the most convenient form of administering medicine to a Horse when he will not take it in food. The ball should be prepared with oil, rather than with syrup, and both in size and shape should resemble a small hen's egg. One person can give it by standing at the right shoulder of the animal when backed into a stall. With the left hand draw the tongue out gently upon the right side, not pulling it, but simply pressing it upon the lower jaw. The ball, held between the tips of the fingers of the right hand, is conveyed into the posterior portion of the mouth, and the hand quickly withdrawn, and the tongue liberated. If the ball is not seen to pass down the gullet on the left side of the throat, a gentle blow on the chin will cause the animal to swallow, or water may be offered. Where the animal is at all refractory or vicious, it may be necessary to hold the jaws open by the halter-rope, or in some cases by the balling-iron, an instrument made for this use.

In giving a drench to a Horse, a horn should be used in preference to the bottle, for fear of breakage. Standing at the right shoulder, raise the head with the left hand under the jaw, and with the right hand pass the lip of

the horn into the side of the mouth, and empty its contents, the head being kept up until they are swallowed. If the animal is violent, place a twitch upon the nose, to be held by an assistant; or if he refuses to open the mouth, the tongue may be gently held to one side, the horn introduced, quickly emptied, and the tongue liberated at once. Under all circumstances, the greatest gentleness must be exercised. Nothing can be gained by impatience or by harsh treatment.

For the Ox or Cow, liquid medicine is preferable, given from the bottle rather than the horn. The bottle is more manageable, and one is less tempted to use it to pry open the jaws, and perhaps thus lacerate the tongue also. Elevate the head only enough to prevent the liquid running from the mouth. The bottle should not be pushed back far into the throat. The tongue should be left free. The following is a very neat and efficacious method: If standing, place the left side of the animal against a wall, and standing on the right side seize hold of the upper jaw by passing the left arm over the head, and bending the latter far round to the right, slightly elevating it. With the right hand, pour the contents of the bottle into the mouth at its angle, using the least possible force.

Medicinal substances can be readily given to the Cat, after properly securing the animal. An efficient method is as follows: Grasp the hind legs above the hocks, between the little and ring fingers of each hand, the fore extremities above the elbow, between the other two fingers, and place the thumbs against the posterior-lateral parts of the head at the base of the ears. Being thus firmly held, the medicine, either solid or liquid, may be given from a common spoon.

A Tree and Potato Planter.

FREDERICK GRUNDY, CHRISTIAN CO., ILL.

Many men are deterred from planting large groves because of the immense labor and time required to set out the trees. They plant only a few each spring as they can spare the time, and thus lose valuable years of growth. The ground can be prepared with plow and harrow, but the planting has to be done by hand labor alone. To obviate this difficulty and encourage planting large forests, I present herewith a tree planter, which will enable a man to set one to ten thousand or more young trees each year, almost as easily as planting so many hills of corn. The machine can also be used to plant potatoes far better than is frequently done with plow and hoe. With this machine 20 acres of one and two-year-old trees can be planted as quickly as one acre with the spade; and 10 acres of potatoes in less time than one acre with plow and hoe, and make a better job. The planter (fig. 1) is similar to a sled, and may be 3 to 4 feet wide. The runners are of 2-inch plank, 12 inches wide, shaped as in fig. 2. They may be shod with a strip of oak or other hard-wood. A strip of oak is bolted near the upper edge of the rear end of the runners. To this strip the entire working parts of the machine are bolted. A V-shaped piece (*e*, fig. 1), built of hard boards, as in fig. 5, marks the furrow. It is made with a solid block in the center, and bolted to the cross piece *d*, fig. 1, to hold the marker firm. Two wings, or scrapers, (*x*, *x*, fig. 1), made of hard-wood and shaped as in fig. 4, are bolted to the cross piece *d*. These wings scrape the earth, thrown out by the marker, back over the roots of the trees. When planting potatoes the smoother is attached, as seen at *n*, fig. 1. This smoother is constructed of boards or plank, and loaded enough to crush all clods, and smooth the top of the row. When planting trees, the smoother is dispensed with. When the machine is moved from one field to another, the bolts are taken out of the strips fig. 2 and 3, and the working parts of the machine laid on the platform *S*.

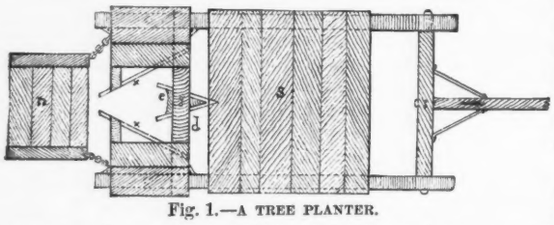


Fig. 1.—A TREE PLANTER.

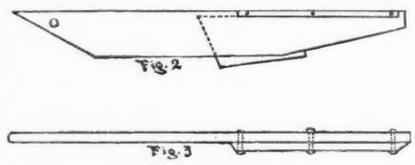


Fig. 2

Fig. 3

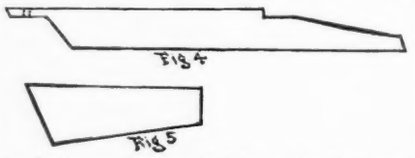


Fig. 4

Fig. 5

Plow the ground deep, and harrow it down fine and smooth before setting the trees. Set stakes to guide in driving as in planting corn. Lay a lot of trees on the platform *S*, and with two smart boys on their knees the work may begin. As the machine moves forward, one boy sets a tree in the furrow close behind the V-shaped marker, and holds it straight until it has passed the ends of the wings, *x*, *x*. The second boy gets another tree ready, and at the proper distance duplicates the actions of the first. The driver moves his seat—or if he stands, moves himself—backward or forward to regulate the depth of the marker and scrapers. Have the roots of the trees properly trimmed and in good order for planting.

In planting potatoes, a man or boy sets a basketful on the platform, and drops them behind the marker, using both hands and planting as far apart as desired. When planting trees, four horses should be used to draw the planter, but with potatoes, one boy to drive and another to drop are sufficient.

The marker and the scrapers should be set to run about four inches deeper than the sled runners. (See fig. 2.) For long continued use these parts should be shod with iron.

Kind Treatment of Animals.—No animal appreciates kind treatment more than a heifer. Naturally gentle, it is only by neglect that she acquires habits harmful to herself and annoying to her owner. The writer has seen a calf six months old made the object of torment for sport by a group of "smart" boys. The heifer had a bundle of corn-stalks bound under her body by a stout cord and was then set at liberty in the barnyard. She ran and kicked, and finally broke through a weak place in the fence and hurried away to the back of the field. The creature was never afterwards the gentle animal she would otherwise have been. The fright made her afraid of all mankind, and especially of the boys by whom she had suffered. In some such way as this, most of the "wildness" in farm animals has its origin.

At this season, when the young stock are for the first time brought into closer relations with the owners or keepers, it is of great importance to employ kindness and gentleness.

Wheat Ruined by Rain.

PROF. N. S. TOWNSHEND, COLUMBUS, OHIO.

Under the above heading recently appeared the following item from Lansing, Mich.: "Nine-tenths of the wheat in this and the surrounding counties has been ruined by a seven-days' rain, the grain being sprouted in the shock, and the straw rotted. The farmers are greatly disheartened, as the yield was bountiful and very little had been secured." From other localities have come similar accounts, differing only in degree. Such reports are not peculiar to the present season. In view of the frequency and extent of such losses, one may ask, "Is it good farming, to leave wheat in shock after it is dry enough to be hauled into the barn, or put into a stack?"

It seems a waste of labor to stack grain for a short period, when by thrashing directly from the field one handling is sufficient. This saving of labor is important, and with some it is a controlling consideration. On the other hand, if grain is promptly secured in a barn or stack, as soon as it is dry, although some additional labor may be required, the practice has many advantages. To some, the occasional sprouting of a few grains of wheat may appear to be of little consequence, when, in fact, if one kernel in a hundred of a lot of wheat is grown, the bread made from it will be perceptibly affected. After harvest, both grain and straw throw off moisture: if this occurs in the stack, the grain does not become musty, which it always does if the sweating process, as it is called, takes place in the granary. Wheat in the granary, or elevator, is subject to injury from the Grain Weevil (*Sitophilus granarius*), which it escapes in the stack. Rats and mice are the pests of the granary, but into a stack built as hereafter described they very rarely obtain admission. Farmers frequently complain of middlemen and speculators who buy up grain while it is cheap, and by holding it for an advance make large profits. Does not the farmer who is in a hurry to thrash and at once put his crop upon the market, play directly into the hands of these speculators? If the farmer wishes to hold his wheat for a satisfactory price, it will keep best in a stack, and need not be thrashed until it is wanted. Observation and experience have convinced many that the most prompt and careful securing of grain is the preferable course; the extra cost of providing barn room or of stacking, if regarded as an insurance charge upon the crop, is money and labor well expended.

There are two modes of stacking in use; the simplest and most common plan is, to begin by throwing down a little dry straw in circular form for a bottom. Upon this the stack is built, commencing around the center, so that the middle will all the time be highest,

with the butt ends of the sheaves all lying outwards, and downwards. These stacks may contain a few loads, and, when completed, have nearly the form of an egg standing upon its larger end. A moderate rain will not enter such a stack, especially if the additional precaution be taken to cover it with coarse hay or straw. For a safer and more permanent stack, a floor is made and supported about three feet from the ground upon stone-capped posts. Where stone is readily obtainable, and of a character that is easily brought into convenient shape, stone posts are preferable, as they do not decay. Upon the top of each post of the stack bottom, whether it be of wood or stone, is laid a projecting stone cap, and on these are placed the timbers for sills, and sleepers, supporting the sticks or boards which make the floor. A floor so supported is above all dampness, and out of the reach of vermin; it may be made round, square, or oblong, the latter form being preferred where much room is required. To make a good stack, two persons are needed, an assistant with a fork, to pass the sheaves, and a stacker, who places them carefully by hand. About two-thirds of a stack are placed below the eaves, and about one-third in the roof; the body of a stack should widen out a little with every course, so that water from the roof may fall to the ground without running down the sides; the roof is usually drawn in at an angle of about 45°. If a stack is to be speedily thrashed, it may be made temporarily secure by a covering of coarse hay or straw; or it may be made more secure, and for any length of time, by a covering of thatch, which is rapidly put on by any one accustomed to that kind of work. For a temporary covering for grain stacks or hay ricks, some farmers provide themselves with a stack cloth; this may be an old main-sail, obtained at small cost, and served with a coat of linseed-oil and tar, or it may be made of new material adapted to the purpose. Such a loose covering is a great convenience, and upon hay or grain stacks it will sometimes save twice its cost in a single year.

Farmers in general are not deficient in industry or enterprise; in the use of new appliances and improved machinery they are prompt to keep up with the times. It may be true, however, that a careful economy, which aims to prevent all waste and loss upon the farm, is not as characteristic of the American farmer as his push and drive. Some may have forgotten the proverb, A penny saved is as good as a penny earned.

A Never Failing Well, or spring, near the house and the barn, is a great desideratum, and it should be found in every pasture. In the drouth of the past summer, when so many wells have failed, some farmers have learned to their cost the value of a good supply of pure water. They have had to draw it from a long distance for family supply, and daily to drive cattle, miles to the nearest river or spring. This has taken a great deal of time and labor, and the cattle have grown thin under the scourge of scant forage, and thirst. The lesson is, to dig the well a few feet deeper, at whatever cost. Take up the curbing if there is soil at the bottom, and dig deeper. If there is rock at the bottom, drill with a two-inch bore, six or eight feet deeper, and explode giant powder, or dynamite and rend the rock in every direction. This will often reach some seam, and let water rush in. If the drive well has failed, get a new pipe, and drive it down several feet deeper. It is much cheaper to drive an iron pipe for a few feet more a day, than to drive cattle long distances for water.

A Home-Made Fertilizer Drill.

Mr. Wm. H. Ridge, Bucks Co., Pa., has made a fertilizer drill that does its work well. He writes us: In one year I think every neighbor will have one, from the way they used mine this year. It is the first one I ever saw, and of course there can be improvements made, but it will put on fertilizer better than any one can do it by hand. I bought a section of a large fertilizer drill, which cost $2.50, and made a light barrow, and put it on. I procured a section of a seed drill, and put that on also; 1½-inch belt will run the fertilizer section, and ½-inch belt is strong enough for the seed section. Broom-corn seed is liable to arch, so I put a stirrer in mine. This drill will sow 200, 400, 700, or 950 lbs. to the acre, according to the size of pulleys. Figure 1 shows the home-made fertilizer drill, and fig. 2, as seen from above.

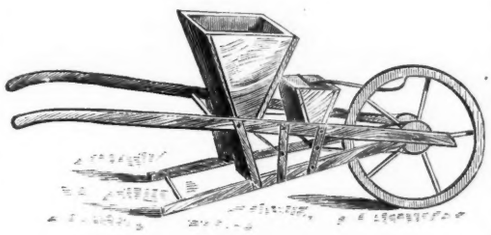


Fig. 1.—HOME-MADE FERTILIZER DRILL.

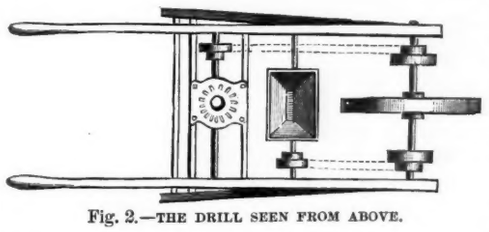


Fig. 2.—THE DRILL SEEN FROM ABOVE.

"High Farming" Does Pay.

A business man of our acquaintance, a few miles out from New York City, purchased some land near his homestead very rough and quite stony. The previous owner had planted it to potatoes some years, in others to corn, etc.,—applying more or less manure. The corn yield had varied from 24 to 40 bushels per acre, but averaged 30 bushels — all that could be expected from land in its condition. The new owner's "what I know about farming" had been mainly gleaned from the *American Agriculturist*. Having a little money to invest on interest, he decided to deposit it in that field.

Taking a month's vacation from business, and assuming personal direction, he hired 30 to 40 men who had just finished grading a railroad. These he set to work with spades, picks, and crowbars, along one side of the field, and they dug over the whole soil two feet deep, picking out all stones as large as a hen's egg. The larger boulders were broken up with sledge hammers or blasted, excepting a dozen or so that were six to ten feet through, which were tumbled into deep pits dug by their sides. Ditches were cut 20 feet apart, 4½ feet deep, and 2 to 3 feet wide, which were half filled with the gathered stones, the larger, flattish ones being so placed in the bottom as to leave a continuous opening or drain. The top sods, weeds, and stubble, and 20 wagon loads per acre of coarse, cheap manure were dug into the lower 16 inches of the stirred soil, and 10 loads per acre of better manure were mixed with the upper 8 inches. Most of the better soil at the top was kept there by bastard trenching, that is, digging a ditch on one side, stirring the soil below, and moving the next top layer over on to it, repeating the process through the whole plot. When finished, this previously rough field was like a bed of fine garden soil. A walking cane could penetrate two feet deep with slight pushing. Every part is within 10 feet of a drain that carries off execss of water, and, as a consequence, may admit air into its open end to circulate through the soil.

The cost was $175 per acre for the spading, gathering stones, ditching, manure, etc. While at work, the owner was often asked by passers-by if he were digging a canal or building a railroad; and when to some neighboring farmers he replied that he was preparing that field to farm it for profit, they smiled at his "freshness," as they called it, and said in substance, "It's all very well for a man making money in city business to bury it in the soil, if he has a mind to, but it is nonsense for him to talk of doing this for profit."

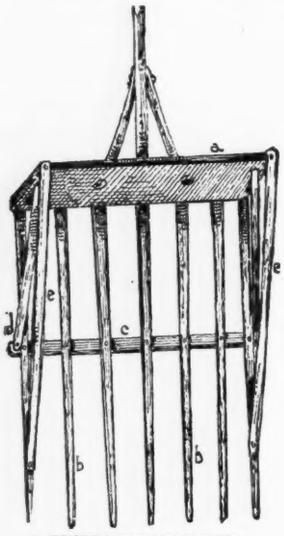
As might reasonably be expected, that garden-like soil has for years yielded an average of 76 bushels per acre of sound corn, and corresponding crops of potatoes. It costs less per acre than formerly to plow, to plant, and hoe the crops, the only additional expense being the harvesting of the 46 extra bushels of corn. This is more than repaid by the increased value of the corn-stalk fodder.

Does it pay? Let us see. The average price of corn here for a dozen years past has been over 70 cents per bushel; but call it only 60 cents, making $27.60 for the 46 extra bushels obtained. But $27.60 is about **16** per cent interest on the $175 expended in improving the soil. If the corn sold for only 38 cents per bushel, it would still pay over 10 per cent on the improvement. And this will go on perpetually, if the soil be kept loose by deep plowing. Let it be noted also, that crops on a soil thus prepared are measurably independent of rains and drouths. The drains speedily carry off excess of water; while the plant-roots penetrate the deep-stirred, aërated soil so far, that they find and carry up moisture in the driest weather, when those growing only near the surface are parched and stunted in a drouth.

An important lesson is taught by this and other similar examples. If all the owners of farms through the country, excepting those already in high tilth and fertility, would sell off enough of their land to supply funds to put the remainder in the best condition possible, their work would be lighter, and their profits from farming much greater. The folly of endeavoring to work too much land is constantly being illustrated by failures, foreclosures, etc. Be contented with fewer acres, and work them thoroughly.

A Leaf Fork.

Mr. G. B. Dyer, Scott Co., Tenn., sends us a sketch of a leaf fork: The head piece is a 3/4-inch oak board, *a*, 5 inches wide



A CONVENIENT LEAF FORK.

and 22 inches long. Tough oak prongs, *b*, *b*, seven in number, are fastened in 3/4-inch holes bored along the lower edge of the head piece. A cross piece, *c*, 1 1/2-inch wide, and 3/4-inch thick, bevelled in front, is nailed on the under side of the prongs, 9 inches from the head. Two rods connect the ends of this piece, *d*, with the top of the head-piece, to give the necessary strength. The fork may be further braced by two side pieces, *e*, *e*, which run from the head to near the ends of the outside prongs. They also help to hold the leaves on the fork. The handle may be a stout round pole, split into three parts and fastened to the head, as shown in the engraving.

Important to all Sending Poultry to Market.

New York City receives a large amount of poultry at all times of the year, both for its own consumption, and for over a million residents in Brooklyn, Jersey City, Hoboken, etc., which get their chief supplies in the Metropolitan markets. On the approach of the Thanksgiving and Christmas Holidays, the receipts are enormous. In former years we have given many hints to those sending poultry to this market, and emphasized the advice that the fowls should not be drawn, as they are for the Boston, Providence, and some other markets. But early in 1882 a strong effort was made by interested parties to secure a law requiring poultry to be drawn before sending it to market in this City. After much discussion, a compromise was effected, and the following ordinance was passed by the Board of Aldermen, and approved by the Mayor, which should be observed by all sending poultry to New York:

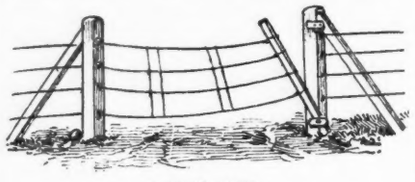
Section 1. That no turkeys or chickens be offered for sale in the City unless the crops of such turkeys and chickens are free from food or other substance and shrunken close to their bodies. That all fowls exposed for sale in violation of this ordinance shall be seized and condemned; such of them as shall be tainted shall, upon examination, be destroyed, and the rest fit for food shall be used in the public institutions of the City.

Sec. 2. Every person exposing for sale any chicken or turkey in contravention of this ordinance shall be liable to a penalty of FIVE DOLLARS for each chicken or turkey so exposed for sale. Sec. 3. This ordinance shall take effect on the first day of Oct., 1882.

This is much better than to require the poultry to be drawn, and may be complied with by *keeping all poultry from food for 12 hours* before killing. After October 1st, all sending poultry to New York should strictly observe this ordinance; otherwise they may be subjected to heavy losses, and those receiving their consignments may be greatly damaged. Send the poultry undrawn, but with empty crops, to be secured by 12 hours fasting before killing, as above.

A Wire Gate.

Mr. O. G. Nevins, Graham Co., Kans., writes us: On the plains here we use wire fences of necessity, and, as lumber is expensive (fence boards bringing $35 per M.), we even make a gate of wire. Provide two heavy fence posts; two stout poles for braces, 10 feet long; a round stick of tough wood, 5 feet long and 2 inches through at the larger end; two 1 1/2-inch pins, 8 inches long, and 3 or 4 wires 8 inches longer than the width of the gateway. Set the posts firmly, and after placing the braces outside of the gateway, attach the wires of the main fence. Bore 1 1/2-inch holes in that side of the post to which the wires are attached, and drive in



A WIRE GATE.

the pins. Fasten the gate wires to the other post with staples, and attach the loose ends to the five-foot pole. To shut the gate, take this pole or gate-head and put the lower end back of the lower pin, and spring the upper end behind the one above. If the wires are all of the right length they will be taut and firm. Two slats fastened to the gate wires will keep them from tangling. A short post set at one side of the gateway may be found convenient to hold the gate when open.

A Supply of Parsley in Winter.

Those who have a greenhouse can readily keep up a supply of Parsley all winter, but it is not difficult to do this in the kitchen where it is to be used. A few leaves of Parsley used as a garnishing to a dish of cold meats, etc., adds much brightness to the table, and Parsley is so useful in flavoring soups, etc., that it is worth the little trouble required to afford a supply through the colder months. Wherever there is room at a sunny window for pots, or a box of earth, a supply may be had. There are two methods of securing this: The seeds may be sown in pots or boxes of good soil, the sooner now the better. They are slow in germinating, and if they do not appear in four weeks one need not be discouraged. When well up, thin the plants so that they will be about three inches apart. As a general thing, a box is better than a pot, but in either case, watering and other care must be given as if it were a geranium in the parlor window. Another method is, to take up the plants that have been raised in the garden and set them in pots or boxes. In doing this, the long tap root may be cut off, and the outer leaves removed. When the plants get well established, a new growth will start and afford an abundance of leaves. After a while, these old plants will push up a flower stalk and cease to form new leaves; when they do this, they are of no further use. It may be well to have some plants raised from seed to take their places. Several years ago we described a beautiful object we saw in a friend's greenhouse, and as it will, no doubt, be useful to many, we here give it again in brief: A small barrel, with its hoops well nailed, had its staves bored all over with inch holes (or larger), about six inches apart. Parsley was taken up from the garden and all the larger leaves removed. A layer of soil was placed in the barrel, and a root of Parsley put at each hole, with its top pointing outwards, with a few roots at the top. At the time we saw it, this was a perfect cylinder of green foliage, the leaves having grown and completely hidden the barrel. If there is not room in the kitchen for a barrel, use a small keg.

A World-Wide Weed—The Canada Flea-bane.

A list of the weeds which infest cultivated grounds in this country, would probably show that nine-tenths of all were originally introduced from abroad—were foreigners. It is a singular fact that as aboriginal man has disappeared before the European, the native plants have, as a general thing, disappeared in the face of civilization, very few native species remaining to annoy the cultivator. Hence, as a rule, the weeds we have to contend with are those which have accompanied the settler from abroad, and which, finding a new soil and climate, have often flourished with an aggressive vigor not known to them in their own homes. But all rules have exceptions, and in this case we have a most marked one in the Canada Flea-bane (*Erigeron Canadense.*) As may be supposed, with a plant found all over the country, this has several common names. Belonging to a genus known in Europe as "Flea-bane," it seems desirable to retain that name, but in some localities it is known as "Horse-weed." In some Western States it is universally called "Mare's-tail," while at the South it is "Colt's-tail," names which the shape of the plant may in a measure warrant, but the origin of the name, "Butter-weed," as it is called in some Eastern States, is difficult to conjecture. In some places where it springs up in cleared land, we have known it to be called "Fire-weed," a name given to several different plants. In Pennsylvania, this, and some related species, are known as "Scabious" and "Scavish," names also given elsewhere to other plants. Of all these names, we prefer "Canada Flea-bane," as that has not been applied to any other plant. The genus *Erigeron* gets its name from the Greek for "spring," and "old-man," as some of the species bloom in early spring and have an abundance of whitish hairs. The genus includes about 100 species, mainly of temperate and mountainous regions. Most of them have the general appearance of an Aster, and they are only separated from that genus by minute botanical characters. Some of the Erigerons are so showy that they are culti-

vated as ornamental plants. The coarsest and least attractive is the one under notice, the "Canada Flea-bane." This plant, common as it is, does not seem to be generally known, at least by name, as each year specimens are sent to us for a name, and as an unusual number have come this season, we give an engraving of the top of the plant, as it usually appears, which will allow it to be identified. The plant is an annual, growing from a few inches to six feet or more in hight; it is coarsely hairy, with long narrow leaves. Above, it branches more or less, and bears a multitude of inconspicuous heads, a fourth of an inch in diameter or less, each with from two to a dozen florets. The fruits (seeds) each have an abundant hairy tuft, (*pappus*,) which assists in their distribution by the wind. In this country the plant is found everywhere North and South, from the Atlantic to the Pacific, but varying greatly in size with the locality. We have seen it in a Michigan clearing forming an almost impenetrable thicket, six feet or more high. In the arid country on our Mexican border (now Arizona,) we have found the same plant not over three inches high, bearing three or four heads, and as unlike in appearance to the one growing in rich soil as can be imagined. If we are indebted to other countries for most of our weeds, we have in part offset the obligation by sending them this. There is probably no country on the globe where the soil is cultivated into which this weed has not penetrated. This plant was known in cultivation in a botanical garden in Europe as early as 1624, and it is supposed to have been distributed from that point. Though we have, so to speak, stocked the world, we still have left at home "enough for seed." By the road sides, in clearings, in fields, and in gardens, it lifts its unsightly head. The fact that it is an annual is the only thing that can be cited in its favor. It must give way to good cultivation. That it is found at all of a sufficient age to ripen its seeds, simply shows neglect on the part of the farmer or gardener. If it has been allowed to get large, pull it, but do not put it in the compost heap, where its seeds will surely mature and be carried out with the manure, but burn and make an end of it. It would be well if all our troublesome weeds could be so easily subdued as this one.

THE CANADA FLEA-BANE (*Erigeron Canadense*).

A CULTIVATED VERNONIA (*Vernonia Arkansana*).

Vernonias—Wild and Cultivated.

Some plants are despised by one set of cultivators and valued by another. Such is the case with the Vernonias, which have now and then been sent to us as troublesome weeds, to be named; yet the same plants, especially in Europe, are valued in ornamental gardening. The genus *Vernonia* was named in honor of an English botanist, Vernon, who travelled in this country many years ago; it now includes nearly 400 species, mostly belonging to the tropics of both hemispheres; about 10 of them are natives within our own borders. As a general thing, they are sturdy, perennial plants, 2 to 12 feet high, branching above and bearing numerous, rather small, thistle-like heads of flowers, which are purple or rose colored, and rarely white, with the general structure of the great composite family to which it belongs. The engraving gives the general appearance of the upper portion of one of these plants. The species is *Vernonia Arkansana*, which we have cultivated for several years. This and others are showy plants, which may be cultivated where sufficient room can be given them, as their rich purple flowers come in August, a month in which most plants forget to bloom. So far as gardening is concerned, several of the native species are much alike in effect, differing only in botanical characters, and any of them may be properly introduced in a spacious garden. In good soil they make large clumps, six feet or more high, with a vigorous, robust appearance that is very pleasing. But we have also to regard the Iron-weeds as weeds. The commonest species, though named "New York Iron-weed," (*V. Noveboracensis*,) is by no means local, but is found in all the Eastern States from Maine to Florida. It grows from two to eight feet high, and in flower is quite as showy as any, with the general appearance of the one figured. It is very apt to spring up in the farmer's meadows, especially if they are at all wet, and while it is not as aggressive as some other weeds, it deprives the grass of a large amount of food, and should be eradicated. We must reply, to those who ask about this, and other plants which appear as weeds, that we know of no application that will kill an undesirable plant and not injure those that we wish to encourage. A little labor in grubbing out the Iron-weeds will keep them in proper subjection.

The Common Pigeon-berry, or Poke.

This widely-distributed plant is, during the spring and summer, a fine example of vigorous growth. Were it an exotic, costly to procure, and difficult to cultivate, how it would be valued! When the growth is completed, and the abundant berries begin to ripen, the whole plant shares in the change from pale green to the richest crimson. Long before frosts are thought of, this change begins with the painting of the stem, and the coloring goes on from day to day in a most striking manner. No doubt all who live in the country know the Pigeon-berry, or Poke. It has a large branching root, six inches or more through, from which arises a stout, branching, leafy stem six, and in rich ground, eight feet high. The racemes of greenish-white flowers are not showy, but these are succeeded by graceful clusters, six inches or more long, of flattened berries, which are at first green, then crimson, and finally of the richest blackish-purple. When the fruit is ripe, the stems of the plant also show ripeness, and are beautifully striped with crimson, while the leaves at this time are of a fine yellow color, with crimson veins. We do not wonder that the Europeans esteem it as an ornamental plant. The fact that it was found to be hardy in a garden in Berlin was a few years ago quoted in all the horticultural journals of Europe. In its maturity the plant is suspicious, as the berries and the root have active medicinal properties. Not so the young shoots, as they push up from the bulky root in spring. Taken when they first appear, with their undeveloped leaves, like asparagus, they are by many preferred to that vegetable. Served like asparagus, they are excellent, and whatever active principle they may possess is dissipated in the cooking. We have much respect for a lady in a Western State, who, having introduced the plant into cultivation, wrote an account of it, which we published in July, 1879. Like many other widely distributed native plants, this has

A Number of Common Names.

Besides "Pigeon-berry" and "Poke," it is known in different parts of the country as "Garget," "Cancer Root," "Coeum," "Scoke," "Skoka," and "Pecatacelleloe." This last, while it may be a common name, can hardly ever become a popular one. Those who find botanical terms difficult, will, we think, prefer *Phytolacca decandra*, the scientific name of the plant, to that. The fresh juice of the berries is of the richest possible purple, but, as many a schoolboy who has used it as red ink has learned to his disgust, it is not permanent. The attempts to fix the color as a dye, by the use of various mordants, have not been very successful. Over two centuries ago the plant was introduced into Portugal, and its berries were used to give port wine, which is naturally pale, a rich color. Its use in wine was prohibited by royal edict, "on pain of death, as it injured the flavor." As a consequence, port wine is now colored by the juice of the Elderberry. The root is the most active part of the plant, causing violent vomiting and purging; as it appears to have marked narcotic properties also, it is evidently a thing not to be incautiously meddled with. Externally, in the form of ointment, it has been found useful in skin diseases of domestic animals, especially the mange in dogs, and for garget in cows. The stems of the plant

Have a Peculiar Pith,

which we have not seen mentioned in any description. If a mature stem be cut open, the pith will be found as a series of disks, placed one upon another. Each disk consists of a ring of pith about a fourth of an inch high, across which is stretched a thin transparent membrane, reminding one of a miniature tambourine. This is only mentioned in the hope that some one may throw some light upon the reason for this peculiarity.

FLOWER CLUSTER AND LEAVES OF THE POKE OR PIGEON-BERRY.

Timely Suggestions on Cider Making.

If apples are converted into vinegar, which is often the most profitable use for them, no special care is required. The apples may be ground and pressed whenever convenient, and the more rapid the fermentation, the better. To make the best cider, the time for pressing the juice, and the temperature at which it is fermented, are of great importance. By cider, we refer to the fermented juice of the apple. Apple juice is sometimes prevented from undergoing fermentation by adding Sulphite of Lime, and other chemicals. Unfermented apple juice is not cider. If one wishes to preserve apple juice in this condition, heat it to the boiling point, bottle, and then cork securely, as in canning fruits.

The old-fashioned and picturesque cider press and mill have nearly disappeared, but several smaller and more effective machines have taken their places. These not only occupy less room, but they are so much more powerful, that they give a greater yield of juice. Orchardists who market the bulk of their fruit, find that it pays to have a portable mill for the conversion of wind-falls and inferior apples into cider, to be made into vinegar. One large orchardist in Indiana, assures us that he finds a large share of his profits from thus utilizing the poor fruit.

While the best cider will make the best vinegar, that made of the poorest apples is so much better than the whiskey vinegar commonly sold, that it is worth while to use all the apples not otherwise disposed of, in the form of vinegar. Each locality has its favorite cider apples; those regarded as best ripen with the light frosts of November, at a season when the temperature is most favorable for the best product. For the best cider, use only sound apples; all inferior fruit should go into vinegar. When the juice is pressed, whether in the old-fashioned press with cheeses laid up with straw, or in a modern press, it will be well to strain the juice, as it flows from the press, by letting it run through a piece of gunny-bag, or a hair sieve. If not new, the barrels should be perfectly clean, and placed in a cool cellar. There are two methods of fermentation. One is to fill the barrels quite to the bung, and as the froth from fermentation runs over, keep the barrels full with some of the juice saved for the purpose. When the fermentation ceases, the barrels are bunged tight, and allowed to remain for a while.

The contents are then to be racked off into a new or perfectly clean barrel. This barrel is prepared by putting into it about three gallons of cider, and burning in it a strip of cloth, that has been dipped in melted brimstone. The barrel after lighting the brimstone should be bunged, the flame will soon be extinguished, when the torch is to be removed, and the barrel well shaken, that the cider within may absorb the fumes. The barrel is then to be filled from those in which the fermentation took place, drawing at a short distance above the bottom, to avoid any lees or sediment. Cider thus treated will keep a long time. Another method is to fit one end of a tube, bent twice at right angles, or curved, to the wooden bung or large cork. The tube may be of glass or tin, with its other end immersed in a cup of water. The gas produced by fermentation will escape, and no air enter. Cider fermented in this manner, and carefully racked off after the fermentation is complete, is so superior to that made in the ordinary rough methods, as to merit the name given to it by the Germans, of *Apfel Wein*. In making vinegar, we have another kind of fermentation, and need free exposure to the atmosphere. Those who make vinegar on a large scale, and wish to work in the most rapid manner, have a house which they can keep heated to about 70° in winter. They know how much old vinegar helps the change of cider into vinegar, hence keep up a constant drawing from cask to cask. This frequent change and exposure to the air, is also beneficial, as is the addition of vinegar "mother" to cider.

A Clump of Chives.—Chopped onion is not so desirable for flavoring potato salad as the finely chopped green leaves of Chives. For imparting an onion-like flavor to soups and stews, Chives are valued by many. It is an old-fashioned plant of the onion family, to be found, as a general

thing, only in old gardens. If one has but a single clump of this, it is his own fault if he has not always an abundance. A part of a clump, divided in spring into small tufts of a few of the tiny bulbs each, and set out, will multiply, and make a large mass by fall. The market gardeners place the Chives in frames, or cover them in the bed with a frame and sash, and thus slightly force them to supply the city markets in early spring. A supply can easily be forced in the kitchen. Before the ground freezes, the later the better, take up one or more clumps and place them in pots or a box—an old tomato can will answer, in any case using soil to fill in all spaces. It is a plant that starts very early in spring, and requires very little heat to induce growth; hence a cool window will be better for it than a warm one. If there is much demand for Chives for flavoring salads, it will be well to have several clumps.

The Russian Mulberry in Nebraska.

G. F. Clark, Gage Co., Neb., who lives near a colony of the Mennonites, gives us this account of their Mulberry tree planting:

The Russian Mulberry was introduced into their European colonies by the Russian government for the purpose of silk culture and to shade and improve the land. They were compelled to buy these trees of the government—each landholder being obliged to plant a certain number. After cultivating them until they found out their value, they voluntarily planted the trees very extensively, and learned that silk culture was not the only object in raising them. They found the timber very valuable for fence-posts, outlasting any other Russian timber. It was also found profitable for cabinet work, and one of the most desirable trees for fuel, besides it bore edible fruit which was marketable in Russia. When the Mennonites came to this country, they brought the seeds of this tree with them, together with those of several other trees, but planted these more extensively than all others combined. The Russian Mulberry is a very rapid grower. Trees, the seed of which was planted by the Mennonites, are now 20 feet high and large enough for fence-posts. They grow very large and bear abundant crops. The fruit resembles the blackberry in appearance, a large share being black, marked with reddish white. They vary in flavor from acid to sweet. The growth of this tree is like that of the apple tree. Many of the leaves have the margin with from 5 to 12 lobes. The Mennonites use it as an ornamental hedge plant, it makes a beautiful fence, and will stand shearing as well as any tree. By some, this tree is regarded as the most hardy Mulberry, and the best suited for silk culture in northern localities. The Mennonites have interested themselves in the silk business to some extent since they have been in this country, and raised some cocoons for sale.

A Quick-Growing Vine.--For a vine to quickly cover a trellis or the unsightly side of a building, and be permanent, a grape-vine will often answer better than any other. One of the rampant growing sorts will give, besides the desired foliage, more or less fruit. In situations where fruit is undesirable and left out of question, we know of no grape-vine that, for its foliage only, is equal to the "Taylor" or "Taylor's Bullit." It bears poor, ragged bunches of indifferent fruit, but for foliage we do not know its equal. Extremely vigorous in its growth, it bears leaves of a handsomely cut outline and of a very dark green color. We have a vine of this variety placed against an out-building, and its luxuriance and the great beauty of its foliage quite reconciled us to its poor crops of fruit.

Notes from the Pines.

Many years ago I passed a couple of winters in the city. The house, like most city houses, had that most useless of all rooms, a parlor, with the two regulation windows facing the street. What to place in these windows to make the house appear cheerful from the street, was the question. A happy thought suggested "Evergreens." It was over 20 years ago, when some plants now popular were but little known. The genus *Retinispora* (or "Retinospora," as it is incorrectly written by some,) has been reduced to *Thuja*, the genus of our well known Arbor-vitæ. Japanese Arbor-vitæ answers well as a name for these trees, which are among the most manageable of all evergreens, and which vary not only in shape of foliage, but in their color, to such an extent that a collection of the different forms will give a most pleasing variety. Fortunately, I not only fixed upon evergreens for the window plants, but upon what were then known as Retinisporas. Such varieties as the nurseries then afforded were procured, and planted out in boxes of a size to fit the windows. They were of common pine, and had a galvanized iron tray to fit the interior.

RETINISPORA LEPTOCLADA.

The room, like most city parlors, was sufficiently warmed by the furnace to prevent freezing, yet not too warm for the Retinisporas, which were of bushy form, and all less than three feet high. They were planted closely in the boxes, to form a sort of hedge. The surface of the soil was covered with common sphagnum moss, to prevent drying out. These plants did good service all winter. When spring came, they were set out in the back yard to take their chances. They all did well, and the next fall were again placed in their boxes, and made a good screen for another winter. No doubt they could have been used in this manner for several winters, but we moved into the country after the second winter, and they were moved with the rest of the furniture and planted in the open ground, where they are yet.

These so-called Retinisporas

are among the most manageable of all evergreens. They can be very readily raised from cuttings. A bit three or four inches long, put into sand, or very sandy soil, will make roots almost as certainly as a Verbena cutting, though it may be longer about it. When rooted, the plant will stand almost any treatment. If needed as a pot plant, pot it, and clip it, and it may be kept for years of any fancied size. If wanted for edgings, strike the cuttings, plant them closely in a row, and they may be kept a long time at any desired hight. If an ornamental hedge is desired, let them grow to the required hight (and they grow quite rapidly), and keep them there by trimming. But to see them in their greatest beauty, they should be grown as isolated trees, with room to develop, when they will form beautiful specimens, furnished with branches from the very base.

While the Trees are Properly Thujas,

they are known, and probably will long be recorded in the nursery catalogues as *Retinisporas*, as that will answer as their trade name. They are now to be had in most nurseries in this country, and they appear to have long been favorites with the Japanese, who have propagated a large number of varieties. I have had the longest experience with that variety known in the catalogues as

Retinispora plumosa aurea,

and a brighter, more manageable evergreen (only it is ever yellow at the tips,) it would be difficult to find. A lover of plants has only to get a bit of this, and he can make what he pleases of it—a tree of 4 inches or 6 feet high in a short time. The catalogues properly keep up the names of the several varieties, though they are all to be traced to two variable species, *Thuja pisifera*, and *T. obtusa*. The variety known as *R. leptoclada* (slender stemmed), is a capital plant for out-door or pot culture. Its foliage has a peculiar bluish-green color, which makes a pleasing contrast with those varieties that have yellow or "golden" tips. A number of conifers have their spray tipped with yellow, but lose it in winter. The variety known as *plumosa aurea* holds this better than most others, and is a capital plant to employ for the winter decoration of beds in the lawn which are to be seen from the windows.

----Of late the writers in English journals have had much to say about the greater

Richness in the Color of Autumn Flowers,

as compared with those of spring. No doubt this difference is noticeable, even in the more equable climate of the British Isles. With us the contrast is most striking. While the majority (not all) of our early wild flowers have delicate shades and tints, in autumn the colors are positive and glowing. At every hand we meet with scarlet, crimson, and rich purples, which prevent the all-pervading yellow of the Golden-rods and related plants from being monotonous. When the flowers have nearly satiated us with rich colors, the leaves take it up, and the season usually ends in a "blaze of glory." The brilliant hues of our forest leaves are not due

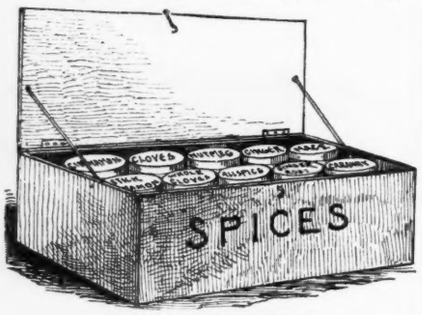
To Frost, but to Ripeness.

If one will carefully observe, he will find that the brightest and richest colors are assumed by the leaves of the maples and others long before there is even a slight frost.

THE HOUSEHOLD

Box for Holding Spices.

Many steps can be saved in doing housework, by having the various articles required kept together, and near at hand. A wooden box for holding spices, like the one shown in the engraving, is a most convenient little affair. It is large enough to hold ten medium sized baking powder tin cans, holding half a pint each. A lid is fastened on with small hinges, and provided with a hook for closing. A narrow strip of leather is tacked from the inside of the lid, to the inside of each end of the box, to



A CONVENIENT SPICE BOX.

prevent the lid from opening too far. The name of the spice contained, is marked on the top of each can, with common white paint. The letters may first be drawn with a lead-pencil, to serve as a guide for the brush. The outside of the box may be finished in any way to suit the taste. Ours is stained to imitate oak, with the word "Spices," in dark-brown on the front. To make the box more ornamental, a pattern may be cut out of heavy paper, and fastened to the wood with mucilage. After the staining has been applied, and the paper taken off, the pattern will look as if inlaid. The staining should imitate walnut or some dark wood. A good design is a small group of leaves in each corner. The veins and a little shading may be put on the leaves after the paper is taken off, by using a small brush and the staining liquid. A simple border might be put around the top of the box and the lid.

Foot Scrapers, or Boot Cleaners.

Some people (men in particular,) do not pay due attention to the removal of dirt from their boots and shoes, and often walk into a kitchen or sitting

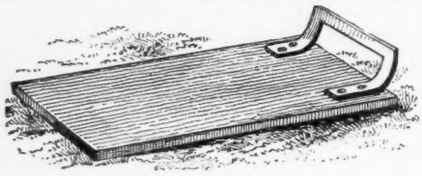


Fig. 1.—A FOOT SCRAPER.

room, upon a clean floor or carpet, with much mud and dirt adhering to their foot-gear. This may be prevented by placing a boot scraper or cleaner near the door, and in laying walks between the house

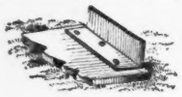


Fig. 2.

Fig. 3.

and the barn, and other out-buildings. To aid those who desire to make boot cleaners, I herewith present several, and of sufficient variety, so that there need be no excuse for an absence of this necessary article near the door. Any of the forms shown may be attached to the step at the door, or secured to a piece of board one inch thick, one foot wide, and about two feet in length. The scrapers shown in figures 1, and 2, are of iron, and attached by screws to the bottom piece. A blacksmith can bend an old piece of iron into the form desired. Figure 3 shows a piece of hard-wood, one foot in length, four inches wide, and nearly one inch thick, with one edge made quite sharp, the whole being nailed firmly to the end of a piece of board. The plan shown in fig. 4, consists of two wooden pins one inch in diameter, firmly secured in holes made in the bottom board near one end, three inches from

Fig. 4.

which is a bar *b*, either of hard-wood or of iron, fastened upon the pins. This form has some advantages, as the tops of the pins, if made flat and sharp, will aid in cleaning the sides of boots. A mat should be provided, and in absence of anything better, a piece of old carpet will serve a most excellent purpose. The house-keeper may need occasionally to refer the careless members of the family to the foot scraper and mat.

Woman's Dress.—The Corset.

I heard a group of children talking about corsets the other day, and it was easy to see the effect upon them of home education, or of daily example. Those who had seen the women about them habitually dressed with corsets, regarded such articles as a necessary part of a well-dressed woman's wardrobe, and looked forward to wearing the same as a matter of course. They seemed to think they could not have good forms, "stylish figures," without such mechanical aid.

Other children, who had never seen their mother wearing a corset, said, "How queer! just as if the natural figure was not good enough," and they began to speak of the evils of tight lacing. Their companions, like most women, asserted that few women wear their corsets very tight now-a-days, and that their friends in particular did not, and while corsets did no harm, they very much improved the human figure.

Corsets certainly are not worn as tight as they formerly were. Fashion allows much larger waists, and partly to this is due the better average health of women now, and partly to thicker-soled shoes, and better covered arms and shoulders. Formerly they were laced in front, and foolish women drew the lacing as tight as possible, often asking help to increase the tension. Though fewer corsets were worn, there was more "tight dressing" than now, for the dress-waists were lined with the strongest, most unyielding material, and fitted as close as possible.

Friends of the corset claim that it affords needed support to the upper part of the figure, and protection to the lower portion from the pressure of bands, and the weight of skirts. But would all female health and beauty fail, and woman remain a mere wreck, and monstrosity, had the corset not been invented? In Anthon's "Roman Antiquities," we read: "Stays for compressing the form into an unnatural appearance of slimness, were not known to the ancients, and would have been an abomination in their eyes." Artificial support of the bust is rarely needed, and such support should come from above, rather than from below, as seemed good to "portly Roman dames" of old. The abdomen does indeed need protection from encircling bands, and dragging skirts. The quickest and surest way, is to abolish close bands and heavy skirts. The corset affords no real protection. It only deadens the sensibility by its steady pressure, and distributes the weight more evenly over the back, hips, etc. This pressure is one of the most common causes and aggravations of those troubles classed as "female weaknesses." These is no need of close bands upon lower garments, and heavy skirts suspended from the hips. A rational style of dress will not include heavy skirts at all—only those that are short and light, and all bands may be fastened to rows of buttons, sewed upon the bottom of a loosely fitting under-waist. Many women now wear under-clothing arranged in this manner.

We are offered various improved corsets, made with shoulder-straps, to support all weight from the shoulders. But the sloping shoulders of women are not adapted to bearing heavy burdens, and many women refuse to wear shoulder straps, they prefer the equal pressure of the unsupported corset, weighted by skirts heavily trimmed, to suspenders or straps upon the shoulders. The combination suit or "chimeloon"—is the best way out of the difficulty—that and light plain skirts.

The temptation to tight-lacing is not so great as formerly, now that corsets are fitted by measure, and then fastened in front with steel hooks. But almost every corset-wearer would find her waist expanding in size, should she leave off the corset, and wear really loose clothing. The corset-steel is one of the worst features. The pressure upon the stomach and thus upon the nerves back of the stomach, results in weakness and general invalidism. Many corset-wearers imagine that the corset is a real support to the strength, because they feel "all gone" without it. This only shows how much mischief the corset has already done. Their feelings are all unnatural. The muscles of the waist and abdomen have lost their native power through confinement. If the toggery worn in the shape of basques and skirts, with bands and weights, oppresses and torments her when the corset is removed, the toggery should certainly be reformed, and the muscles given a chance to recover their lost power. Physicians have always condemned the corset as prejudicial to health, and the best artists have condemned it as distorting woman's natural form, and detrimental to real grace and beauty. But there is little hope of woman's emancipation in large numbers, from these bonds, so long as closely fitted waists, and especially basques prevail.

Travelling Case.

When going on even a short journey, one often wishes to carry some articles that may be packed in a small, compact dressing case, which will take little space in a valise or hand-bag. Travelling

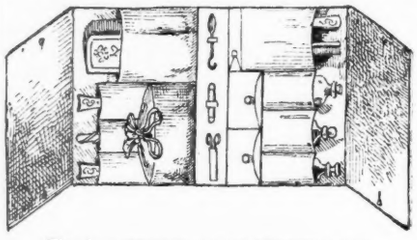


Fig. 1.—INTERIOR OF TRAVELLING CASE.

dressing cases of all degrees of elegance can be purchased, but a very convenient one may be made at home with little work and at small cost. The case here illustrated is made of heavy linen canvas, lined with rubber cloth. Any other material preferred may be used for the outside, but the lining

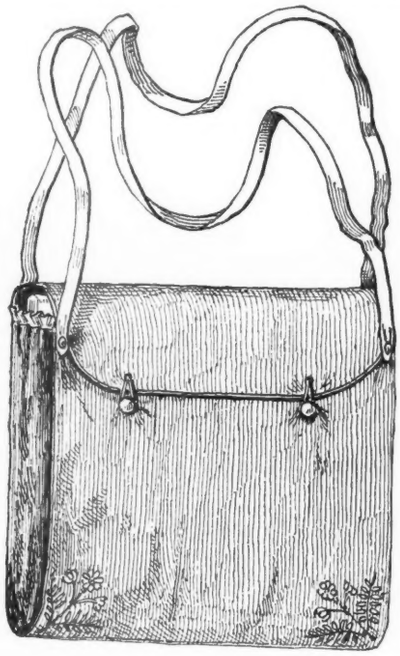
Fig. 2.—THE FINISHED CASE.

should be of rubber cloth, which is on sale generally, and is not expensive. It is usually a light gray color, and is not so heavy as the oil cloth often used. For an intermediate lining between the rubber and outside canvas, drilling is well suited, though any strong material may be used. Cut the rubber cloth and lining in pieces 12 inches

wide and 22 inches long, and baste them smoothly together. The pockets are all made of the rubber cloth only, and the top of each is bound with ribbon before they are put on. For the side holding the comb, brush, and bottles, cut one piece 5 inches deep and 10 inches long, and put this on as shown in the illustration, its top being within 2 inches of the edge of the back of the case. Full it in at the bottom to 8 inches in length. Stitch it twice, to make three equal divisions.—Below this put a pocket 3 inches deep and 8 inches long; divide it in the center, and provide with two flaps. At its side is a small pocket, an inch deep and 4 inches long. Above the small pocket is one for comb and brush, 7 inches deep and 5 inches wide. One inch of the five is fulled in. Put a piece 9 inches long and 6 inches deep, with its top an inch from the edge of the case, and full it in to 7 inches wide, and divide it into three pockets. Below this make a sponge pocket of a piece 4 inches deep and 9 inches long, and a piece 4 inches deep by 16 long. Sew these on with its edge an inch over the brush pockets. Join the narrow edges of the long strip, and sew it to the top of the pocket and along the back an inch above the lower edge of the upper pocket. Cut eyelets in the upper edge of the strip, and insert cord for drawing up. For the clothes-brush pocket, cut a piece 5 inches wide by 8 long, and put it on to come within 3 inches of the edge of the case. In the 2 inches of space between the sides put a small pocket for scissors, and loops for knife and button-hook. Across each end of the case sew flaps of rubber cloth, 10 by 12 inches, with the wrong side of the seam on the outside of the case. Cut button-holes in each side, and sew buttons on to correspond, for fastening the flap over the pockets. For the outside, cut the canvas 12 inches wide and 22 long. After it has been ornamented around the edge with a border in cross-stitch, baste the two smoothly together, and bind around with braid or ribbon. The handles are made of the canvas, and stitched on last.

Satchel for School Books.

It often happens that children have to walk quite a distance to school, and they should be provided with a satchel for carrying books and luncheon. It should be large enough to hold an atlas, and have long straps for suspending it over the shoulder. To make one, cut a piece of heavy linen, or Burlap



A SATCHEL FOR SCHOOL BOOKS.

canvas, twenty-four inches long, and fourteen wide, two pieces fourteen inches long, and four wide, and one fourteen inches long, and eight wide. Double the largest piece in the middle, and sew the two pieces in at the sides, as shown in the illustration. They should be fulled in at the bottom and a strong rubber cord run in a casing, to draw them at the top. Sew the other piece to the back, after the front has been rounded and bound with braid. Sew two buttons on the front, and two loops on the flap as fastenings. The straps are made of strips two inches wide, doubled, and stitched together, and fastened to the satchel with buttons. The seams may all be made on the right side, and bound with red braid, but if put on the wrong side, they should be over-cast, for the satchel does not need lining. A pattern in red wool may be worked in each lower corner.

Fancy Knick-knacks, and Writing Paper.

Fancy-work now has such a prominent part in household adornment, and adds so much to the beauty and attractiveness of home, that few women can afford to neglect it. Embroidery, both in Kensington stitch, and laid work, was never more fashionable than at present, for either fall costumes and mantles, or for lambrequins and table scarfs, while it is extensively used on panels and birthday cards. It is exceedingly beautiful when worked on light satins. One that we recently saw had water lilies in raised work, while a back-ground of sky, rushes, and birds in flight, was painted in. The two arts—embroidery and painting—are so similar in their effects, that they can very well go hand in hand. We frequently hear complaints of the expensiveness of having articles stamped, but this has now been lessened by a device, which allows every one to do her own stamping at small cost. Handsome designs for table-cloths, piano-covers, or lambrequins, come printed on paper, in six-yard lengths, for 25 cents, while small bouquets of flowers are as low as seven or eight cents. If the paper is carefully basted on the cloth, and ironed with a hot iron, the pattern will be completely transferred.

The English crewels are the finest, and least likely to fade, but are double the price of the American, so the Columbia crewels are the most extensively used, and will last fresh and bright for a long time. For Thanksgiving dinners, and other occasions, pretty little doilies, or finger-bowl napkins, are being outlined in cunning designs of fruit, flowers, or figures, on small squares of fringed linen. These may be done in either silk, crewels, or better still, the washing cottons, which come in exquisite shades, and it is said can be laundried without fear of fading.

For those who paint, even but a little, there are hundreds of pretty things to be made, and one of the most common, is oil-painting upon common China floor-matting. The cutest screen we have seen of late, is done in black and neutral tints on this material. The design represents a branch of a tree, upon which are seated two wise-looking

AN "OWL" PANEL WITH ITS LUNAR INVITATION.

owls, one of whom has his head bandaged up, while the other eyes him severely, and is supposed to be asking the question which is printed above—"Where have you been owl night?"

The prettiest dinner cards are painted in water-colors, and it would be well for young ladies to practice this charming art, as so much can be done with it. For amateurs, there are color boxes which come as low as $1.25. They can be readily found and contain all the colors required, besides Chinese white, sepia, and four brushes. One can easily be carried in the pocket, and is accompanied by full directions for using. The owl is evidently the favorite bird this season, and appears in great variety, seeming to have quite taken the place of the long-legged storks. The funny little panel of which an illustration is here given, will be found very salable at the fancy fairs, which will soon be held in anticipation of the holidays. The owls are made from peanuts, the eyes being painted in with yellow and black, while the wings are merely two small downy chicken feathers, attached to the sides with mucilage. A pine twig is tacked on with a few stitches to a note card, and on this the "birds" are firmly glued, while the branch is fastened near the end with a bow of narrow blue and cardinal ribbon. A crescent moon, and any appropriate motto or sentence may be painted above the friendly "owls."

In letter and note paper, the styles are as many and varied as the tastes of the people who use them. We would give the preference to the delicate tints, with a flight of birds, crescent moon, or dainty purple pansy, in embossed stamping, ornamenting one corner. The "alligator skin," however, is considered very stylish. It is rough, of a light *café-au-lait* hue, and somewhat resembles parchment, but it divides the choice with the terra-cotta, and cadet blue paper, both of which stand high in favor with city people at the present time.

Canning Tomatoes.—By "C. H. D.," Carroll Co., Md. "Take perfectly ripe tomatoes, scald and remove the skins, keeping the fruit as whole as possible. Place in a preserving kettle, cover, heat up slowly, and cook until they are boiling hot all through. Put in cans or jars and cover tightly. Do not add any water in cooking, as a good tomato will of itself afford plenty of juice.

The Doctor's Talks.

I am always glad when my young friends ask about common things. Concerning articles in common use, we often take no thought as to where they come from, or how they are prepared. "H. T. W.," asks a question that many older persons would like to have answered. He says: "We sometimes have cocoa for breakfast instead of coffee, is this made from the cocoanut? The cocoa bought at the store, is in irregular bits, like something larger that had been broken up, and though I have had a whole cocoanut, I find nothing in it like this."

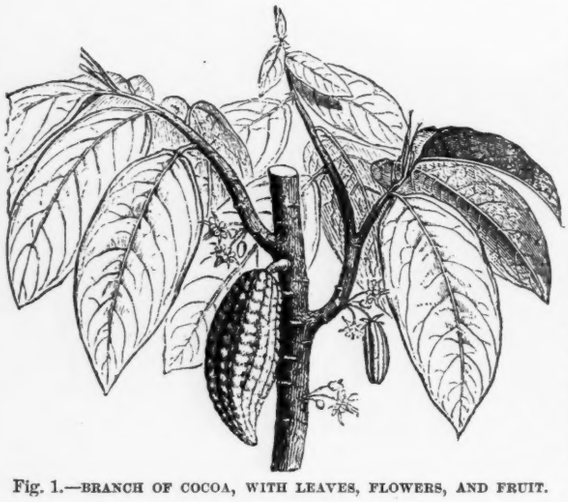


Fig. 1.—BRANCH OF COCOA, WITH LEAVES, FLOWERS, AND FRUIT.

Cocoa, and Cocoanut,

are names in common use for two very distinct products. Singularly enough, neither name is correct, and these show that slight changes in spelling may become established by long use, and lead to confusion. The cocoanut grows in tropical countries, upon a tall kind of palm-tree. The nut is not now brought here in its original state so much as formerly. When it comes from the tree it is about a foot long, and is three-sided. The outer part is a thick, tough, stringy husk. To save room, the nuts are now brought to market without the bulky husk. As most of you know, they are more or less

Fig. 3.—WHOLE SEED.

Fig. 4.—SEED SPLIT.

oval, about the size of a pint pot, and have a very hard shell. At one end of this shell are three roundish spots, one of which is soft, and easily cut into with a knife, while the other two are like the rest of the shell. It is from this soft spot that the germ or young tree pushes when the nut is planted. The shell is lined with a rather tough, white flesh or "meat," and in the hollow of this is a sweetish liquid known as the "milk." The "meat" is eaten, and used in some kinds of cookery; the hard shell is made into dippers, and ornamental boxes, while the coarse fibres of the outer husk is made into ropes, and the coarse but strong material known as "coir matting." Those who have seen the cocoanut, no doubt recollect the three spots at one end. These give that end a strong resemblance to a monkey's face, two of them answering for eyes, the other for the mouth, while between is a projecting portion, that will answer very well for a monkey's nose. It is from this that the Portugese, when they first met with the nut, called it the *coco*, which in their language is the name for a mask. Hence the original name was

Coco—and not Cocoa-nut.

But usage has made it cocoa in our language, and so it will no doubt remain. The cocoa we use as a beverage, is prepared from a nut, but the product of a tree very different from the one just mentioned. When the Spaniards first visited Mexico, they found that the native Indians used a drink which they called *cacao*, made from the nuts of the Cacao-tree. The Spaniards introduced the nuts into Europe with the native name. When the English began to use it, strangely enough they in time altered the name to cocoa, as they had altered the name "coco-nut" to cocoa-nut. We have in these two products curious instances of the manner in which common names will get changed. Our cocoanut should be "coco-nut," and our "cocoa," the beverage, should properly be Cacao, but both have been altered to cocoa. With this explanation, it is easy to see that much confusion has followed, and "H. T. W." is not the only one who has been puzzled by it...But my young friend wishes to know

About Cocoa, and how it is Prepared for Use.

As already stated, the Spaniards found the tree in Mexico; it is also a native of Central America, generally, and of several of the West Indies. The tree is a small one, usually not over 20 feet high; it has large, pointed leaves, and small, rose-colored flowers, which are followed by a fruit or pod, 6 to 10 inches long. Figure 1 shows a branch with leaves, flowers, and fruit, but all much smaller than the real size. The fruit when green looks a good deal like a cucumber; it is yellowish when ripe. It is then gathered and split open, and the seeds, which are in a sort of spongy pulp, are removed. The trees of the different countries vary greatly in the size of the fruit, and the number of the seeds; while some contain only 30, others have over 100 seeds. The engraving, fig. 2, much smaller than the pod itself, shows its shape, and the arrangement of the seeds, while in figs. 3 and 4 a whole seed, and one split open, of the natural size. The seeds are placed in boxes or in pits to ferment for a few days, and are then spread in the sun to dry, when they are ready for export. This fermenting is said to make the seeds less bitter, and to render them more solid. The greater share of the cocoa used throughout the world, is supplied by Trinidad, but that from Central America is regarded as the best. (If you do not know where Trinidad is, stop right here, and find out from your geography.) The botanical name of the tree is *Theobroma Cacao*, the first or generic name being a fanciful one, given it by Linnæus, and is made up of Greek words, meaning "Food for the gods," while the specific name is the Mexican *Cacao*. From the cocoa *beans*, or seeds, are made cocoa, cocoa-shells, chocolate, etc.

Cocoa proper, is the bean which has been roasted, the same as coffee. It is then broken into a coarse powder, and the husks being removed by a fanning mill, it is ready for sale, to be used in the same manner as coffee. "THE DOCTOR."

Thanksgiving Games.

Thanksgiving is coming! Soon the proclamations of the President and of all the Governors, will be read in all the churches, and printed in all the papers, and there will be cheery family gatherings in many happy homes. Grandparents, children, and grandchildren, will be united around the Thanksgiving board. After the turkey and pies have been enjoyed, followed by the nuts and raisins, the old folks will cluster about the fire, to tell stories, and recall reminiscences of "ye olden time." Then it is that the boys and girls will want some merry sports and games, and we give here a few plays, suitable for a Thanksgiving party.

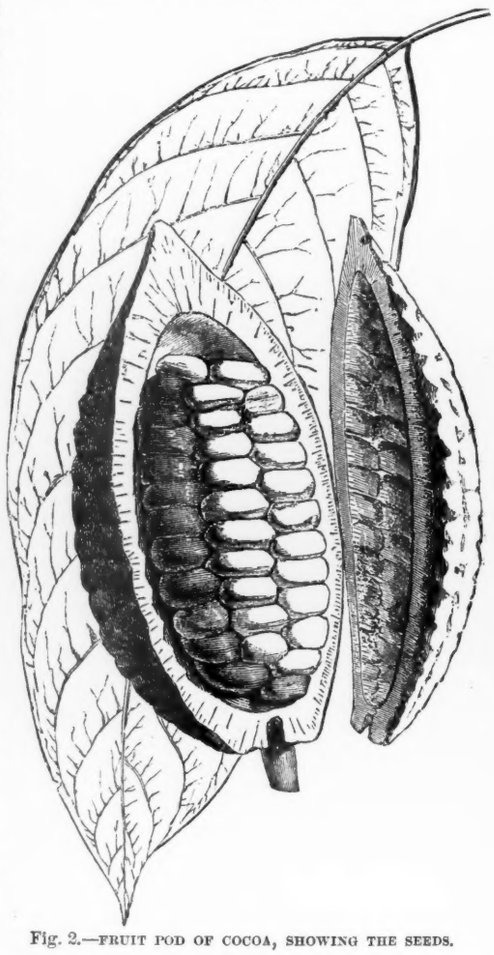


Fig. 2.—FRUIT POD OF COCOA, SHOWING THE SEEDS.

Where the company is large, one of the most amusing games that can be selected, is called

The Silent Gypsey Band.

For this, a head brother, and two door-keepers must be chosen, while the various other brothers and sisters form a circle, standing in perfect silence, neither laughing nor smiling. The leader then whispers to each one, some rediculous act to be performed, such as leading a brother round by the ear, blowing an imaginary feather off of a sister's nose, turning a summersault, or anything the imagination may suggest. He then raps with a cane upon the floor, and points to each member in turn, who must do whatever he has been directed, with perfect gravity, while if any of the company venture to smile, giggle, or speak, he or she is immediately marched out of the room by the watchful door-keepers, and not allowed to return until quite over their merriment. As every one desires to see the others perform, they are generally anxious to come back as soon as possible, but another laugh will send them out again in a hurry. While resting from this merriment,

"Cupid is Coming."

will be found quite entertaining. A letter must be chosen, and the termination "ing:" For instance,

we will suppose D, to have been taken. The first player says to the second, "Cupid is coming."—"How is he coming?" asks the second.—"Dancing," rejoins the first.—The second then says to the third, "Cupid is coming."—"How?"—"Drinking," and so the question and answer go round, through all the words beginning with D, and ending with "ing." Those who cannot answer the question on the spur of the moment, must pay a forfeit. Another capital game that will tax the memory and gravity of the youngsters, is

"One Old Ox Opening Oysters."

The leader commences by saying, "*One old ox opening oysters,*" which each one must repeat in turn, with a sober face. When the first round is finished, the leader begins again: "*Two toads totally tired, trying to trot to Troy,*" and the others repeat in turn, each separately.—"*One old ox opening oysters. Two toads totally tired,*" etc. The third is, "*Three tawny tigers tickling trout,*" which must be added to the first two, and so on to the fourth, and up to the twelfth and last round, each given by the leader successively, and repeated by the other players. They are as follows:—"*Four fat friars fanning a fainting fly. Five fair flirts flying to France for fashions. Six Scotch salmon selling six sacks of sour-kraut. Seven small soldiers successfully shooting snipe. Eight elegant elephants embarking for Europe. Nine nimble noblemen nibbling nonpareils. Ten tipsy tailors teasing a titmouse. Eleven early earwigs eagerly eating eggs,* and *Twelve twittering tomtits on the top of a tall tottering tree.*"—Any mistake in repeating this legend, or departure from gravity—is punished by a forfeit.

Our Puzzle Box.

GEOGRAPHICAL PUZZLE.

A cluster of islands in the Pacific Ocean went shopping one day: She bought a peak of the Rocky Mountains to wear on her head—a string of islands in the Pacific, for her neck—a cloak of some islands in the northern part of Lake Michigan—shoes made of a country in Africa—and some furs of a cape in Florida. When she came out of the store, a cape on the coast of Virginia asked her to ride home with him. The air was a country in South America, so he wrapped her up in a city of New York—and they rode on through a lake in British America. As they were going along, a river in Illinois peeped out at them from its hole—a country in Europe flew over their heads—a river in Wisconsin howled at them—a big black lake in British America ran after them and growled—and they thought they heard the bay in France roar. They were in a great cape of North Carolina—to add to their terror, the island off the coast of Scotland grew cloudy—and they heard a clap of a bay in Michigan. Soon, however, they came out of the lake in British America—the island off the coast of Scotland became a cape south of Ireland—the mountains of Africa shone—and they reached home, and said a cape south of Greenland, without any other adventure.

RIDDLE.

Five hundred begins it, five hundred ends it,
Five in the middle is seen,
The first of all figures,
The first of all letters,
Take up their station between.
Join these together, a word they will bring,
It will give you the name of an ancient king.

CHARADE.

With sighs in every breeze that murmers,
And peace in every shade that falls,
My first with slowly fading moments,
Brings sweet forgetfulness to all.

My next with final letter doubled,
Gives sweet repose to those who rove,
And shields them from my third, that wildly
Moans o'er the sea and sky above.

The full notes of my whole seem floating
In cadence sweet on every breeze,
And care-worn souls are soothed in slumber,
And wild winds sleep among the trees.

NUMERICAL ENIGMA, 1.

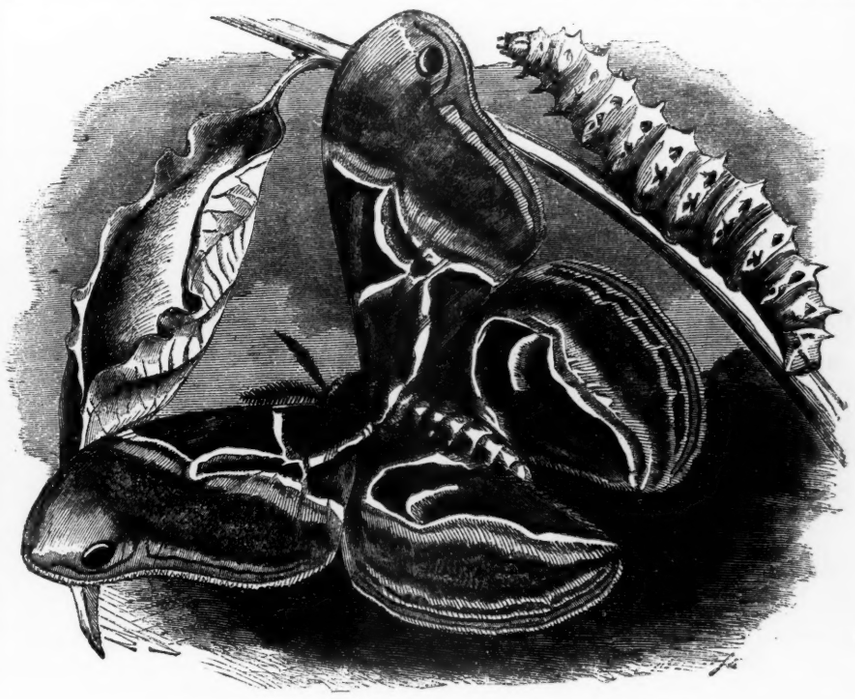
My first is in milk, but not in butter.
My second is in flirt, but not in flutter.
My third's not in mitten, though found in glove.
My fourth's in devotion, but not in love.
My fifth is in hope, but not in despair.
My Sixth is in bruin, but not in bear.
I know the world cries, "O, what's in a name?"
But my whole was surely a poet of fame.

NUMERICAL ENIGMA, 2.

I had just retired to my 5, 6, 3, when my 5, 2, 3, whom we call 3, 4, 8, jumped on my dressing table, and caused my 1, 6, 7, 8, to fall upon the 7, 2, 3. I visited my whole in Rome. AUNT IDA.

A Family of "Silk" Worms.

As soon as the cold of autumn disrobes the trees and shrubs of their foliage, it had been the custom of my family to gather the cocoons of several varieties of moths. One year, in removing the little dry eggs of one of the most beautiful of our moths that had been deposited about, it occurred to me that, by taking care, early caterpillars might be raised. So the following fall I gathered one hundred cocoons. They were placed in a drawer in a cool room, and the last week in May removed from the drawer and arranged in various places. Having then only the limited space of a sitting-room and bedroom, I placed them on mantel shelves and tables, and those that had been gathered on twigs, over pictures and in vases. During the next ten days seventy-five perfect moths appeared. The moths were quiet during the day, but at night they often awakened me by beating against my face.



A MOTH, CATERPILLAR, AND COCOON OF THE "SILK" WORM.

They deposited eggs every where, in masses generally, but here and there two or three were found together. They were about as large as the head of a toilet pin, slightly oblong in shape, and of yellow-white color, tinted with pink. When first deposited, they could be pierced with a needle, but after two or three hours they became hard. A great number of eggs were attached to two wooden knitting-needles, some to a curtain tassel, more to a dried "Sea-fan" (*Gorgonio,*) that ornamented the mantel, and great numbers to parts of furniture, etc.

The "Sea-fan," knitting-needles, and tassel, I placed in a wooden box, and that the eggs might have sun and dew, deposited the whole on a ledge outside my window. On several warm days I sprinkled them with water, and at the end of about twelve days, hundreds of tiny black caterpillars appeared. They were about one-eighth inch long, and wriggled and twisted continually. Wishing to experiment, I had gathered currant, maple, elder and grape-vine leaves. A carpenter had made for me four wooden boxes, about twenty-four inches long, twelve inches wide, and twelve inches deep, with a little door in the back of each. I tacked fine gauze over the tops, placed fresh earth in the bottoms, and covered it in each box with one variety of leaves. I then gathered the little caterpillars very carefully with a turkey feather, and placed about forty in a box. At the end of two weeks they were 1½ inch long, and as large round as a slate pencil. At this stage, the caterpillars had changed in color to a light green. As those that fed upon the elder leaves were larger and more vigorous than the rest, all were fed on these leaves and became large and strong.

Two weeks after placing the caterpillars on the branches, (outside my window,) a severe shower of hail stones fell and the caterpillars curled up into ball shape, and seemed unable to move. They remained in this condition for two hours, and fearing they would die, I made a fire in my sitting-room and brought them in. As soon as they felt the warm atmosphere, they began to creep about and eat as usual. They ate incessantly, and so loud a noise do they make with their horny jaws that they can be heard all over a room. They begin at the margin of a leaf and cut transversly.

On Sept. 1st, I had over 100 full-grown caterpillars, measuring from 3 to 4 inches in length. I sent several specimens to friends by mail, in a perforated tin spice box, with green elder leaves, and they all arrived in good condition, and spun perfect cocoons.

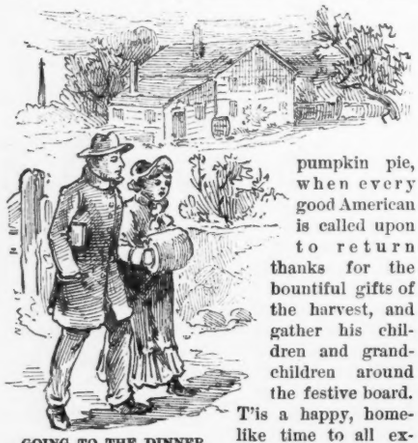
The first week in September, they began to move restlessly about, and I knew they were looking for a place to spin. They wound themselves round and round with a white silken thread, and after a few hours were hidden from view. The outer portion of the casing is made first, so that the after arrangement of the soft inside filling is not to be seen. When the outside of one particular cocoon was finished, I cut a hole in it about the size of a pea with scissors. I was much surprised to see the caterpillar cease his work inside and spin over the aperture until it was completely sealed up. I repeated this operation six times, and six times did it patiently repair the damages. At first the cocoons are pure white and of beautiful silken texture, but after a few days they assume a delicate light-brown color. Those exposed to the weather become very dark-brown, and are rough and stiff, like parchment. Some of the caterpillars spun upon the elder twigs I had placed for them, others in the corners of the boxes, two under a table, one in a slipper, and another in the sleeve of a dress that was hanging in a closet.

Two of the caterpillars strayed from me and spun their cocoons on the branch of a shrub that grew near my window. I left them there for the winter, and took them in in May, brown and weather beaten. The engraving represents one of them, with the moth, soon after emerging. They creep about the outside of the cocoon for a time, with damp, drooping wings, and their beautiful bronze coloring, with the red and white markings, are then seen to the best advantage. AUNT IDA.

How Jamie Spoiled the Thanksgiving Dinner.

AGNES CARR.

The great New England holiday, Thanksgiving, was at hand! that day sacred to roast turkey, and



GOING TO THE DINNER.

pumpkin pie, when every good American is called upon to return thanks for the bountiful gifts of the harvest, and gather his children and grandchildren around the festive board. T'is a happy, homelike time to all except those unfortunate barn-yard families, the chickens, ducks, and turkeys, which at this season are slaughtered by thousands—a sort of burnt sacrifice to the memory of the Pilgrim Fathers.

For weeks beforehand, Mrs. Pringle had been rolling, stirring, and chopping, in preparation for the grand event; for in addition to her own family, she had invited the Parson and his wife to dinner, and the former was as fond of good turkey as his parishioners, and why should he not be? while the latter was celebrated as a house-keeper for miles around. So Mrs. Pringle felt considerable pride in having her Thanksgiving feast as perfect as possible, and awoke on the morning of the last Thursday of November, with the conviction that it was to be a day of triumph. She was sure no pantry in the country could display a more tempting array of cakes and pies, and no housewife boast a larger or plumper turkey than "Mr. Gobbler," who two days before had lost his haughty head upon the chopping block.

But alas! she had counted without her host, or rather without Jamie, that incorrigible small boy, who always seemed to play the part of Puck in the otherwise well-regulated Pringle household.

JAMIE BEHIND THE FLOUR BARREL.

For months he had watched the round yellow pumpkins turning more and more golden in the sun, and longed for the time when they should be transformed into pies, and many a time he had been obliged to flee from the wrath of Gobbler, and when safe on the other side of the fence, had shaken his fist at the blustering fowl, and shouted, "just wait until Thanksgiving old fellow, and I will have my revenge!"

Therefore it was somewhat of a blow on Thanksgiving morning, when he had taken refuge in the store-room, to escape being dragged off to church, to be discovered as the last bell was ringing, hidden behind the flour barrel, making way with the choicest pie of all the lot—the one that was to turn the parson's wife green with envy—and to be informed that, "if he could'nt go to meetin', on Thanksgivin', he could'nt eat any of the dinner." In vain he pleaded and shouted; his mother gazed upon the ruin of her master-piece, and remained like adamant. "She shall be sorry!" muttered Jamie, as Mr. and Mrs. Pringle finally departed for the sanctuary, and he set his fertile brain to work to devise sundry means of torment. Aunt Dolly, the colored cook, was busy in the kitchen, and had no time to watch "massa Jamie," who improved his opportunity by emptying the contents of the sugar bowl into the chicken-pie, investigating the interior of sundry cakes and tarts, and finally took a light lunch off of the left wing of the roasted duck.

THE ESCAPE OF THE DOG AND THE DINNER.

Service and sermon over, the Pringle family returned, accompanied by parson Greenleaf and his wife, and it was a sight for hungry souls, to see Mrs. Pringle bustling about, scolding Aunt Dolly, and finally marshalling her family and friends to seats at her hospitable table.

The blessing had been asked, and parson Greenleaf was rubbing his hands with satisfaction, as the door opened to admit Aunt Dolly, bearing aloft a huge trencher, on which reposed the brown and steaming Gobbler. Mrs. Pringle's face fairly beamed, when suddenly Aunt Dolly tripped on the threshold. Away flew the turkey in one direction, the platter in another, while the poor old woman fell headlong to the floor, not having observed the string which naughty Jamie—who was snugly ensconsed under the table, enjoying the fun—had fastened across the door-way, and which was now snapped asunder, and quickly drawn away. With a scream, all started to their feet, while Towser, the watch-dog, made a dash from a distant corner, seized the bird, and before any one could stop him, was off with his Thanksgiving dinner. Without a turkey, the feast was shorn of half its glory. The discomfitted cook returned mournfully to her kitchen, and farmer Pringle found it hard work to satisfy his hungry guests with chicken-pie, for it proved too sweet to be eaten, while the cranberries had been too plentifully salted to be palatable. At length, in despair, Mrs. Greenleaf said she would try a wing of the duck, and finding it tender and good, the parson concluded to take the other. Over went the bird, when to the farmer's dismay, no other wing appeared. "Where is it?" he gasped, while Mrs. Greenleaf shook with suppressed laughter, as she observed, "It seems the Pringle fowls are all either maimed or missing," while the hostess longed for the floor to open and hide her confusion. "Those doughnuts look tempting," remarked the parson, helping himself, when suddenly one slipped through his fingers, and went flying into the air, it being the top cake, to which Jamie had fastened an almost invisible line, and now twitched quickly away.

"The dinner is bewitched!" exclaimed the parson, rising in indignation, "but we did not come here to be made fun of!"—"It really is very strange," said Mrs. Pringle, "but I am sure that bad boy of mine is at the bottom of it."—"Take a glass of cider," said the farmer soothingly, "that I am sure is all right."—The parson benignly condescended to do so, and raised the tumbler to his lips, but set it down again in a hurry. "Molasses and water! Come, May, we have had enough of this." Tucking his wife's hand under his arm, they departed, leaving Mrs. Pringle in hysterics, while her enraged husband discovered and dragged from beneath the table, the author of all this mischief, and invited him to a secret conference in the barn, from whence he emerged very repentant, with swollen eyes, and tear-stained face.

AUNT DOLLY TRIPPED IN THE DOORWAY.

His dreams that night were disturbed by a vision of "Mr. Gobbler," grown to unwonted proportions, and brandishing a huge horse-whip. The next day Jamie was obliged to eat humble-pie, and beg the pardon of the good parson and his wife.

A Bit of Greenery in Winter.

However desirable it may be to have flowers in the dwelling in winter, they are not within the circumstances of every one. The house may not be suitable, the hands too busy to allow of even a little care to be given to flowers, or one may live where the plants can only be procured with great difficulty. It is wonderful what a few green leaves will do in enlivening an otherwise cheerless room, and green of some kind is within the reach of almost every one. If living where flower-pots are unknown, then use something else. Old fruit or tomato cans may be covered with some inconspicuous material, and answer well. Convert some kind of a dish into a basket to hang in the window. One of the best baskets we have seen was an antiquated wire ox-muzzle, lined with moss. As to the plants, of course one must rely upon the wild ones. If there is a cranberry bog within reach, a clump of vines filled with fruit, makes a charming object. The little shrub common in such bogs, known as Leather-leaf (*Cassandra,*) will bloom if the stems are kept in water or in wet moss, as well as rooted plants. Another bog-plant, the Side-saddle Flower, or Pitcher-plant (*Sarracenia,*) is very pleasing. A large plant will flourish finely in a bowl of wet moss, or in wet sand. In moist woods the little Partridge-berry, or Twinberry (*Mitchella,*) forms dense mats of green, studded with coral-like berries. A plate or saucer filled with this, makes as bright a table ornament as one need have. Indeed, there are few localities that do not afford some plant which may serve as a bit of green in winter for the eye to rest upon. If the room is kept warm enough at night, a sweet-potato placed part of its length in water, will give a luxuriant vine of richest green. Then there is the large end of a carrot to be converted into a hanging-basket. Scoop out a cavity, and hang the carrot top downwards, keeping the hollow filled with water. If nothing better can be done, place some heads of wheat in water, until the grain sprouts. If no wheat is to be had, a saucer of sand, or one filled with cotton or moss, in either case kept wet, may be sown with grass-seed, or flax-seed, and as the tiny plants appear, the children will find something in their development to daily interest them.

Nervous Exhaustion.

The natural cure for disease from over-work is *rest*, but here a great mistake is sometimes made. When a person is tired out or exhausted by too much physical labor of any kind, we do not say, "You have worked your muscles too exclusively; you should have given more of your vital energy to mental work, and to restore the equilibrium you must immediately take up some mental work. Rest yourself from a hard day's labor at hay-making, or washing, by an hour's work at mathematics." The *very* tired man or woman does not care even to read, but inclines to seek entire rest, perfect laziness, or "balmy sleep," until the strength recuperates. It is quite as unreasonable to urge physical exercise upon a person whose brain is really tired with labor. Let a little rest intervene. The general health is best maintained by a proper intermingling of physical and mental exercise, but perfect health requires some hours of perfect rest in every twenty-four, and some time for simple recreation, or what children call play.

Sometimes what we call "laziness" ought to be allowed. A child (or a man) who grows fat and lazy from over-feeding, should be put upon a plainer diet and urged to exercise. But those who grow languid and have little appetite from nervous exhaustion, ought to be carefully nourished by nutritious food of easy digestion (since the digestive organs are probably in a weak condition), and allowed to rest and gather up strength before being called upon to expend it. No stimulants will afford any real help. They call out the strength temporarily, and make one *feel* strong while the influence lasts, but this is only wasting the strength. One may live for a time upon stimulants, and appear to be helped by them, but only genuine nourishment really builds up the strength. Food alone, however good, cannot cure nervous exhaustion. Pure air, sunlight (all of this that one can get and endure), cleanliness, warm, easy clothing, and restful surroundings, are all essential, and these natural agencies alone will effect a cure in almost every case if taken in time, while the case is curable. The food taken should be real nourishment, not simply the pretty little invalid's dishes, made up of delicate starches and flavorings, that one often sees recommended by ignorance. Starch has nothing for the brain and nerves, and for this reason white bread is very poor food. Flour should be used that contains all of the gluten of the wheat. The "entire wheat flour" is recommended by physicians as the best. Oat-meal, good milk, eggs, beef, and the best fruits and vegetables, all help to build up strength. Pure air night and day are needed, and the time should be spent out of doors as much as possible.

For those who are only beginning to suffer from nervous exhaustion, light gardening and other employment may be useful. Those who are much worn down with brain labor, had better not try anything at first more laborious than riding, as walking wearies an already tired brain. There is no more healthful and enjoyable exercise than light horseback riding; it brings many muscles into play, diverting the mind, and gives tone to both mind and body. "Diet and Quiet" are among the best of our physicians.

Notes from a Southern Home.

My Corner.—Every woman, I suppose, has her "corner" in one of the many different apartments in a house containing a large family. I sit in mine as I write. It does not look as if some fairy wand had lately touched its furniture. It is simply a deep bay-window, with shades all raised, for I do not believe that there can be health where there is not light and a reasonable amount of sun. There is an abundance of flowers in my corner; not rare exotics; indeed some are only wild flowers.

Flower Management.—My flowers need but little care. I use home-made trays to keep from the floor the water which drips through the boxes in which I usually keep them. One of the boys made the frames. To be large enough to catch the drip from half a dozen boxes of flowers, each a foot square, I have a frame 14 by 75 inches, or two frames 14 by 38 inches. I always have the frames a little larger than the boxes over them. These frames, which are an inch deep, are covered with stout oil-cloth, and when finished, are like an oil-cloth waiter. Set a frame on the floor, and place the stand for the flowers, etc., on it. Boxes are more durable, and, if neatly made, even prettier than the earthenware we buy. I have to destroy grubs, etc., in the soil of my flower-boxes. I slake a piece of lime, and then add an abundance of water. After standing a day or so, pour off the clear water and use it upon the earth infested, but do not sprinkle the plants themselves.

Feather Flowers.—Just now is the season for Grosbeaks. The boys, on their return from gunning, have brought me the birds, and I picked them myself, as the delicate gray of the feathers struck my fancy. I selected all I wanted, being careful not to let them get damp. Now I have half completed a wreath, about a foot in length. To make a flower, of course the number of feathers depends on the size and kind of flower desired. In making a flower with a single row of petals, I arrange the feathers between my thumb and finger until they suit my ideas—until they form a perfect flower; then I run a piece of wire about two inches long up through the quills of the feathers, that appear below the fingers, then wrap the stems—the wire being in the center—just while I hold them. Green or brown silk will answer, but silk the color of the feathers is more tasteful. In gray, the darkest shade is used as leaves, and a pretty contrast is made when the lightest is employed for the petals.

Children's Under-Garments.—I think there would be less indigestion and restlessness among growing children, if they were supplied with proper clothing and food. Over-careful parents persist in housing their children, building them up on stimulants, etc., treating them generally like hot-house plants, when really all they require is the ordinary care you would give any other growing animal. Of course it will be understood that I am speaking from a physical point entirely. Children, to be healthy, *must* have fresh air and all the exercise they can get, properly cooked food, with little or no *grease* used in preparation, especially in this southern climate. Cotton-seed oil is a good—in that it is more wholesome—substitute for lard and other animal fats. Exercise both develops children's muscles, and hardens them, and prevents that unhealthful flabbiness so often met with. A child should wear nothing in the least tight or heavy around the waist. To prevent this, and still not burden the child with an unnecessary amount of clothing, I have made this week sets of (I suppose we may call them) supporters. They are made with straps short enough to allow the weight of the garments to be borne by the shoulders only.

Children's Drink.—I find that in such weather as we have in the South, the quantity of water children would drink to quench their thirst would be very unwholesome, so I keep lemons prepared in this way: roll well a half dozen lemons at a time, slice thinly with a very sharp knife, so that no juice is extracted in cutting. Put a layer of slices half-inch thick in a wide-mouthed jar (stone-china keeps coolest), then sprinkle liberally with sugar. In this way go on until the jar is filled. If ice is handy, place a piece in the mouth of the jar, and set it in a cool place. A piece or two and a spoonful of juice is all that is needed in a glass of water. Sometimes the children take a glass of milk before going to bed. Southern Home.

Keep Out the Cold Air.

It is much better to have the ventilation of our dwellings under control than to have a constant inpouring of air, no matter how cold it may be. The windows, especially in houses built as cheaply as possible, let in all around (and particularly where the two sashes meet,) an astonishing amount of air, so much that in severe weather it is almost impossible to make the room comfortably warm. By checking this inflow of cold air from without, the same amount of fuel that before failed to make the room warm enough, will be so much more effective that considerably less coal or wood will be burned. "Weather strips" of various kinds have been invented to be used around windows and doors for the purpose to which we have referred. The essential part of these is a narrow strip of rather stiff India-rubber fabric, attached to a strip of wood or metal, which may be fastened to the window in such a manner that the rubber will cover the cracks between the sashes and the frames, and elsewhere. Those strips are very useful, but are not to be had in all places; besides, while not very costly, they involve an outlay which many would gladly avoid. Before the rubber strips were introduced, woollen ones were in common use. The material known as "list" or "listing," the marginal strips being woven on broadcloth and other goods, is convenient, and costs little or nothing. This material is not obtainable everywhere, nor is it the best substitute for the window strips. By pasting strips of paper around the sashes the current of air can be kept out quite as completely as by any other method. Brown paper will answer as well as any, and if the job be neatly done, it will not be unsightly. When no longer needed, the paper may be pulled off after it has been wetted with warm water. One sash in each room should be left for necessary ventilation, and some movable strip, such as lath, covered with cloth, provided to close its cracks if necessary. A strip of board or plank, covered with some fabric, to be used to close the crack at the bottom of each door, will be found very useful.

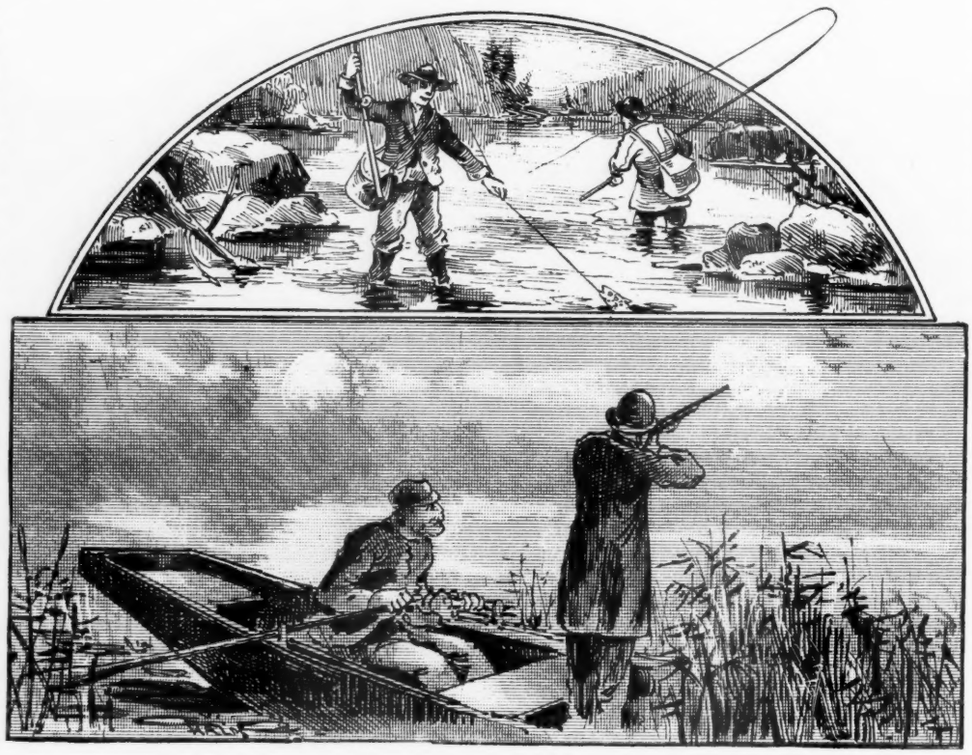
Keeping Forest-Tree Seeds.

It is pleasant to note that each autumn brings an increasing number of inquiries as to the preservation of the seeds of forest trees, as it indicates a growing interest in tree planting. The seeds of our native trees are not likely to be injured by cold. Heat, on the other hand, and consequent dryness, soon destroys their vitality, and after a few days exposure to a dry atmosphere they could not be made to germinate. When a nut or other seed drops in the woods, it falls upon dead foliage by which it is soon covered, and it remains in a bed of damp leaves throughout the winter. In preserving seeds we have only to imitate as closely as may be the natural method. Where the quantity is not large, the seeds may be mixed with an equal bulk of sand, and kept cool. It is better for those with hard shells to be exposed to the alternations of freezing and thawing, hence the box or keg containing them may be completely exposed to the weather. Where large quantities of walnuts, hickory-nuts, chestnuts, or other large seeds are to be kept, a less troublesome and expensive method is followed. The nuts are placed in heaps of five or six bushels and then completely covered with turf. The sods should be neatly matched and no opening left. If these sods are not readily procured, the heaps may be first covered with wild hay, straw, or with leaves, and then a few inches of earth is to be put on and neatly finished in order to shed rain. Some seeds, the various Thorns for example, can not be made to germinate the first year, but the plants will come up freely in the spring of the following year. Instead of sowing such seeds and allowing the ground to lie idle, or what is worse, grow a crop of weeds, the end may be readily accomplished by what is called "stratification." This consists in making alternate strata of seeds and earth, thus forming a square heap with steep sides. The seeds are left in the heap until the time for sowing in the second spring, when they are sifted out and sown at once. In our climate, such a heap might become too dry and thus spoil the seeds; a better method is to mix soil and seeds in a box or other receptacle, and bury the whole in a convenient place. Small quantities of seed may be treated in the same manner, by using a flower-pot.

Flower Vases for Winter.—The most economical disposal of a few cut flowers in winter, is to distribute them thinly through some basis of green, and thus make each flower, even the smallest, look at its best in its green setting. Last month we gave a method of doing this in a vase prepared with fresh moss (*sphagnum*) and ivy. A correspondent of "Gardening Illustrated" (England), gives another, which he is so far from English as to call a 'wrinkle." A handful of wheat-ears (we should say heads of wheat), cut at the proper length, are put in water to soak a few days; these are then arranged in the vase, with water, which is to be changed twice a week, and placed in a cool room. The whole becomes, by the germination of the wheat, a mass of fine green, and remains so all winter; if the growth becomes lanky, trim with scissors. As one gets a few flowers, they may be arranged in the green, and without flowers it is a pleasing object in winter, and one of those inexpensive household decorations that can be very readily adopted in the families of most farmers.

Camp Life in Florida.

Our artist here presents us some original illustrations of out-door life in Florida during November. If any of our readers are troubled with bronchial complaints or with weak lungs, we advise them to go there for the winter months, in preference to staying in the cold climate of the North. The expenses to and fro are not large. You can find board at moderate rates all through the State. But better still, you can erect your own Cabin, or your own Tent, and live very cheaply, shooting your game, which is plentiful, and liberally supply your table. You will want to take a few cooking utensils, and other things pertaining to camp life. We know of families who have gone to Florida for the cold weather, and spent the entire winter months camping out at a less cost than their house rent would be at home.



WINTER CAMP LIFE IN FLORIDA.

Drawn and Engraved for the American Agriculturist.

Saving the Corn Husks.

The epithet "not worth shucks" probably came into use before shucks or husks of corn had a market value. In some of the southern cities are establishments which purchase immense quantities and convert them into material for upholsterers, who use it for filling mattresses, and in whole or in part for stuffing chairs, lounges, etc. There are a number of domestic uses to which they may be put, and a stock of them should be secured before they have been injured by exposure to the weather. We have seen beds made on the farm vastly better than any husk-bed that can be purchased. The husks were slit into strips about half an inch wide by drawing them over points or blades fixed in a block. Husks split in this manner make excellent cushions for farm wagons. Their use to braid into horse collars, and into door mats is well known in some localities. Door mats are made of two kinds; in one the braid is made smooth in the ordinary manner and sewed with very strong thread, making both sides alike. In the other a doubled husk is woven into the braid, leaving the ends projecting upon one side. When a braid of this kind is sewed, the projecting husks form a mat like a coarse brush. The ends of the doubled husks are to be clipped off evenly. This forms a most serviceable mat. A mud-mat for the back-door is made of a board or plank of convenient size, nailing cleats at the ends to prevent splitting, and boring numerous inch holes in it. A tight roll of coarse husks is placed in each hole and made fast by driving a wooden peg into the center of each. The ends of the husks are then clipped and the mat is finished. Those who are fond of making useful and fancy articles will find the inner husks a beautiful and easily worked material. These should be selected as soon as the corn is husked and assorted according to their thickness; those found next to the ear are very soft and delicate and should be kept for the finest work. When wanted for braiding they can be made pliable by dampening, and used whole or split, according to the size of braid. Those who are skilled in braiding can make various kinds, but the novice must begin with the common three-strand braid, taking care as one husk is nearly used up to slip under another so that the braiding may be continuous. Such braid may be made up into beautiful and serviceable table mats, baskets of various kinds, slippers, etc. No doubt the finer husks could be made into a braid suitable for excellent summer hats.

Harvesting the Roots.—Beets and mangels are protected from the light early frosts by their broad leaves; but as soon as the leaves droop, and the plants have finished their growth, the roots should be dug. It is often a great saving of labor to loosen the roots with a subsoil plow, running it close to one side of the row. It is objectionable to store large quantities of roots in the house cellar, as the foul gases rise, making the air unhealthful. They may be stored in pits, in a dry place. First throw up the roots in heaps, and cover with straw and a layer of boards. Earth is thrown upon the boards with the exception of the extreme top, which is left for ventilation. Enough earth should be used to make the interior of the pit frost proof. But unless the heaps are on high, dry ground, it is important to cut pretty deep trenches around them, with outlets to carry off any excess of water that may be in the soil.

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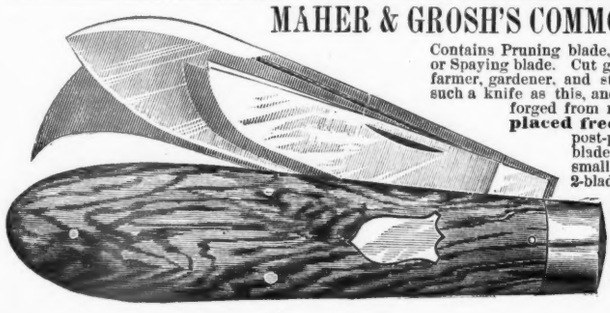

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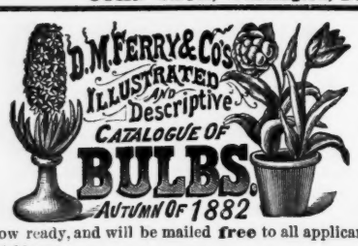

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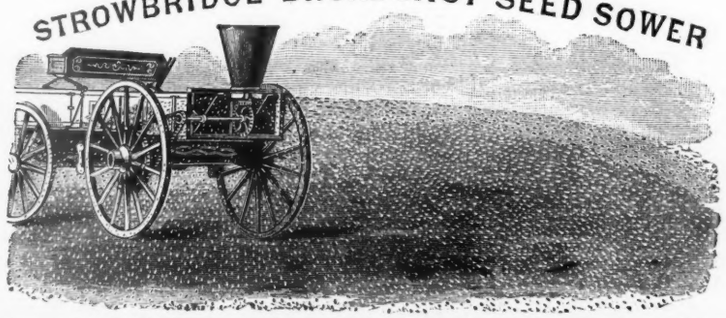

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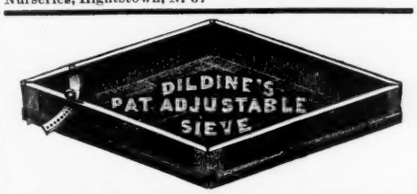

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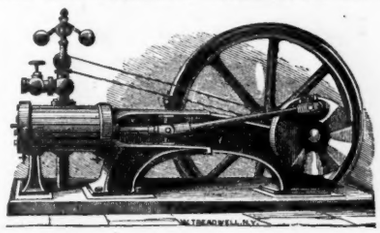

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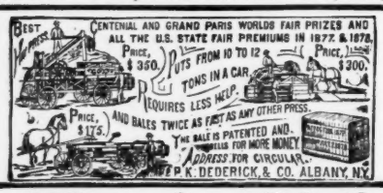
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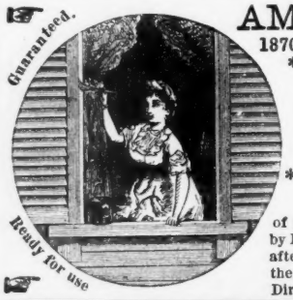

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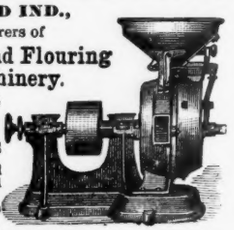

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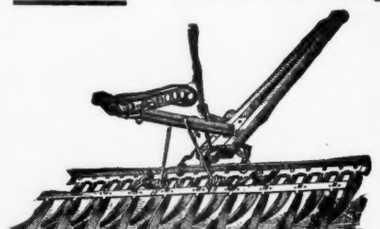

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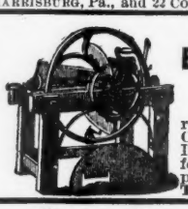

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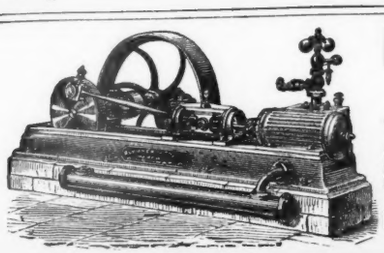

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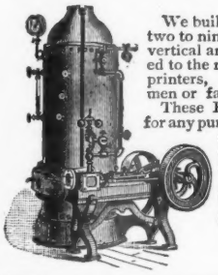
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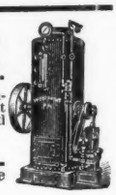
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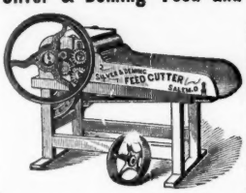

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Back numbers of the "American Agriculturist," containing desired articles, or those referred to in the "Basket" or elsewhere, can usually be sent post-paid for 15 cts. each, or $1.50 per volume.

Clubs can at any time be *increased* by remitting for each addition, the price paid by the original members; or a small club may be made a larger one at reduced rates, thus: One having sent 5 subscribers and $6, may afterwards send 5 names more and $4, making 10 subscribers for $10.00; and so for any of the other club rates.

What is Cow Grass? asks "T. G.," Bergen Co., N. J., who has seen it mentioned in English journals.—"Cow Grass" is a name for a clover but little known in this country, the "Zig-Zag Clover" (*Trifolium medium,*) sparingly naturalized in some of the older States. It differs from Red Clover in the shape of the leaves, darker purple flowers, and in the ziz-zag bending of the stems. Neither of these differences is very constant, and some botanists think it is only a form of red clover. The English farmers pay much more attention to the varieties of clover, and their peculiarities, than we do. They have at least six distinct varieties of red clover, differing in size, in the duration of the root, and in color of the flowers. Cow Grass Clover is for some purposes preferred by the English, as it is two weeks or more later than any form of red clover.

An International Horticultural and Botanical Congress.—In 1883, the Imperial Horticultural Society of Russia will celebrate the 25th anniversary of its organization, by a special Exhibition and Congress, to be held at St Petersburg, from the 17th to the 28th of May. An invitation is thus early extended to horticulturists of all nations to exhibit, and to societies to send delegations. Particulars may be learned from Dr. Regel, Director of the Imperial Botanic Garden. American horticulture has not been adequately represented at any of the former International gatherings, and we hope that the same may not be said of the coming Congress. We have much to learn from others, and not a little to teach them in horticulture.

Treatment of Weeds.—In riding along our country roads, I have often noticed long beds of garlic, docks, and other weeds spread in the road-bed. The weeds had been pulled from a field near at hand, and then dropped when off the owner's premises. When a heavy rain falls, the seeds are deposited on a neighboring field, and in a year or so, some farmer has a very undesirable crop, and one with which he will have no little trouble. I know of a field that was once little better than a bed of docks from the above cause. The proper way it seems to me, is to destroy these plants before they can possibly ripen, or if they have been neglected, burn them, and kill the seeds. E. G. P.

Sunflower Seeds for Fowls.—"G. E. R.," Essex Co., Mass. Your fowls will not refuse even the seeds of the large Russian Sunflower, after they get acquainted with them. Crush a few of the grains at first, and they will soon take kindly to whole ones, though they are three-quarters of an inch long.

A Kettle Holder.—I have felt for a long time like casting in my "mite" to help some, if possible, to an easier way of doing hard labor. There is nothing more trying to a person's patience and temper, than to have a kettle of boiling soap, or other substance upset. We made a good support from an old wagon-tire. Measure the size of the kettle as high up as it is desired to have the tire, cut the tire to fit, and weld the ends firmly together. The remainder of the tire is used for the three legs, which are fastened to the band. With this holder, the kettle may be set where most convenient, and it does away with pole or prop, and there is no danger of burning a wooden fork, and letting the soap into the fire. It will hold the kettle firmly, and the contents may be stirred as much as desired. Mrs. A. M. S.

The Grain Gamblers Still at Work.

Until quite recently, a general hope and expectation prevailed that the large crops of 1882 would prove too heavy a load for the gambling speculators in breadstuffs. But unfortunately for the interests of the whole country, such is not the present outlook. Take, for example, the condition of the Chicago wheat market at the end of September. During a few closing days prices were gradually worked up, and on the 30th, when September options terminated, wheat sold at $1.08 per bushel for delivery on that day, while it was offered at 93 cents and 94 cents for delivery the next day and onward.

How did this occur? For a long time previous a class of speculators known as "shorts" or "bears," believing that the improved crops must lower prices, had made large sales of "September wheat," that is wheat to be delivered when called for during September, at prices considerably below $1 per bushel in Chicago. The purchasers, known as "bulls" or "longs," took these options and quietly bought up nearly all the wheat in store and on the way. The "bears," when called upon to deliver, found little grain available except as purchased from the "bulls," and the latter run the rates up as high as they dared to do, and called in their contracts. Of course the sellers had to pay the difference between the contract prices and the market rates as controlled and fixed by the buyers. Reckoning the amount of wheat thus contracted to aggregate 10,000,000 bushels, a low estimate, and the artificial difference to average 10 cents per bushel, the "bulls" received a clean million dollars profit. And this is to go on. Already extensive contracts are made and are daily making for future months, counting as far ahead as February, and even to May, and embracing an aggregate many times larger than the entire surplus that will be for sale. As we write, the Chicago quotations come by telegraph thus :—

October Wheat.....	94¼c	October Corn.. . .....68¼c	
November Wheat.....94¼c		November Corn.....60c	
Year Wheat.. ... .93⅞c		Year Corn..... ..51¼c	
October Oats.....31½c			

By "year wheat" and corn is meant that the sellers can deliver their sales, or call for margins at any time during the rest of this year. The above quotations show the belief of the bears that there will be times before the close of the year when prices will range enough below 93⅞c. for wheat, and 54¼c. for corn, to enable them to realize a good profit, while the buyers calculate on the manipulation of accessible supplies, and manufacturing reports, so as to keep prices above these figures until December 31st is passed.

Bad Effects of the Wheat Speculation of 1881-2.

Very great harm has been done to this country by the gambling speculators in the grain crop of 1881, and the evil effects are likely to continue during many future years. We were fast coming to be the constant and chief feeder of Great Britain, and, at frequent intervals, of other parts of Western Europe. England, with her limited home territory, and her teeming manufacturing population, never produces anywhere near as much breadstuffs as her people consume, notwithstanding the fact that by thorough tillage, high cultivation, and the use of abundant fertilizers, her wheat crop averages 28 to 29 bushels per acre, or more than double the average yield of this country. The great improvements in transportation facilities from our grain regions to and across the Atlantic, enables us to successfully compete with the producers of Southeastern Europe, and other more distant points formerly largely relied upon. This would doubtless have continued had prices been governed by the relative supply and demand.

But taking advantage of the short crops of 1881, a class of speculators here bought and controlled our surplus, and put up prices so high that English dealers could not take our wheat. They therefore began canvassing every other available source. The high rates enabled foreign dealers to gather many million bushels in India, and to not only glean large quantities from localities hitherto considered inaccessible, but also to make drafts upon the "reserves" usually stored there against temporary drouths, or occasional short crops from other causes. These supplies were brought from remote points, not only in India, but in Australia, and elsewhere, and laid down in Great Britain at lower rates than they could be taken from the grasp of the speculators who held our American exportable stocks, even when ocean freights amounted to only a very few cents per bushel.

The result is, that all these foreign lands have been stimulated to very greatly enlarge their wheat production, and with cheaper labor to offset the longer carriage, they will hereafter supply a very large percentage of the breadstuffs which would otherwise be taken from this country. So our wheat growers can not indulge any reasonable hope of realizing high prices hereafter, except now and then, in years likely to be far apart, when there may be a chance general failure of crops throughout all the rest of the world. It would have been an immense gain to our farmers in the long run, if they had subscribed ten, twenty, or fifty million dollars, presented the sum to the speculators, and sent them into retirement. But the evil has been done and there is no help for it. It will be worth while for the next legislatures of the various States to try to devise some laws that will effectually squelch all gambling in breadstuffs carried on by dealing in "margins."

The Oyster-shell Louse on a Willow.

"C. H. B." sends us from Southport, Conn., a twig of Kilmarnock Willow, more completely covered with the Oyster-shell Bark-louse than any apple twig we ever saw. We have in former numbers figured this scale-louse, which might have been more appropriately named "Mussel-shell," as its scales are more like mussel-shells, than those of the oyster. These scales, at the present season, cover only eggs and the remains of the female louse. Next spring, when growth begins, these eggs will hatch, and the minute and active lice will make their way to the young shoots, anchor themselves by the beak, and soon form a scale-like covering similar to that of the parent. They can only be attacked in the lively state during a few days, and at this time they are so small that they escape notice. Sometime ago we published an account from one who found a pear tree infested by these scales. Painters were at work upon his house at the time, and in a sort of desperate freak, he took a brush and painted the tree, as he said, "from stem to stern." Next spring, to his surprise, it came out all right and flourished. We have also given an account by one who, having some young apple trees badly infested by these shell-lice, painted them over with crude petroleum and perfectly restored the trees. A tree so completely covered as this specimen would indicate, can not live—indeed our correspondent says that one of her kilmarnocks has died already. We should try crude petroleum. By this we mean the natural oil as it flows from the wells, and by no means any of those liquids called petroleum oils, which are dangerous compounds. The application to the tree may cure, but it may kill, but the result will be the same, as the insect is likely to destroy the tree, if unmolested.

American Apples in England.—The first important sale of American Apples took place in Liverpool, on September 21st, when 1,648 barrels were sold. The prices ranged from 16s. to 27s. 6d. per barrel. The Messrs. Houghton & Co. inform us that the demand is likely to continue, and fair prices to be maintained, so long as the arrivals are moderate. In former years, when the fruit brought a little more than the price at home (transportation added), every kind of trash was shipped, without regard to variety or condition, and the market glutted with unsalable fruit. At the date referred to the arrivals had been 3,086 barrels against 16,236 to the same date in 1880, a year which apparently taught shippers caution. This season the apples from the States have arrived in better order than those from Canada, which is the reverse of former years. The two varieties which brought the highest prices were "Red Pippins" and "Ramshorns," which sold for 3s. to 5s. per barrel more than Baldwins and Greenings. It would appear that varieties are labelled to suit the market, as neither of these is an accepted name among our fruit authorities. "Red Pippins" is a synonym for four different varieties, including "Ben Davis," which is most likely to be the one sent abroad. "Ramshorn" was the name of a fruit so poor that it went out of use long ago. It is difficult to conjecture to what variety it is now given, but it must be some good and well-known one, as it sold for $1 or more higher than apples regarded here as among the best.

Look to the Labels.

When trees are taken up in the nursery the labels are hurriedly wired on, and usually very tightly so that they may not be lost. These tags are only to allow the purchaser to identify the trees until he has planted them, and are not intended to be permanent. If such labels are left as they were attached, at the first increase in the diameter of the branch a strangulation will take place, and if the wire is a strong one, the bark will be completely cut through to the great injury of the tree. We have shown that in an orchard no labels are really needed; if a proper record is made the variety may be known by its position. But many like to know about a tree at once, and prefer to have a label for ready reference, even if they have a record besides, and on scattered trees or those grafted with more than one variety, a label is convenient. It is best to avoid wooden tags altogether, at least if put on with wires. No matter how loose the wires may be, some of them will become imbedded in the bark before it is noticed. Very cheap, durable and safe labels may be made of sheet zinc or thin sheet-tin. Cut the metal in the shape of a long wedge, from a quarter to half an inch wide at one end, running to a point at the other, and from 6 to 10 inches long. Write the name near the large end, upon zinc with a common lead-pencil, or upon tin with an awl or other sharp point, scratching through the thin coating of tin to the iron beneath. These may be attached by coiling the small end loosely around a small twig. Another way of attaching the zinc strip is to punch a small hole midway of its length, and having it placed over a twig like a loop, pass the small end through the hole and secure it by a twist. If trees were planted last spring or this autumn with the nursery labels still attached, no time should be lost in removing them and either replacing them by others, or trust solely to the record.

More About Spiced Pickles.—A Canadian correspondent writes us that the recipe we gave in Sept. last, "does not appear to be very spicy," hence one is sent "known to be used by many families." It is as follows: Bruised Ginger, Ground Mustard, Salt, of each 4 oz.; Turmeric (ground) 1½ oz.; Black Pepper (ground) 1 oz.; Cayenne ½ oz.; Mustard Seed (whole) 2 oz.; Vinegar, one gallon; mix the spices with a little of the vinegar, then put all together in a stone pot and allow it to stand for a few days, stirring occasionally. "All that is necessary to do with the vegetables to be pickled, is to wipe them and put them into the pot from time to time as gathered. The pickles will be ready for use in about six or eight months." He adds: "The only drawback is, that the pickles can not be used for some months, but those who use it, make up their supply accordingly." So much for our Canada friend, and in return for his recipe we suggest that he make his vegetables ready, place those used whole in brine, let those used sliced or chopped be sprinkled with salt, and leave them for a few days; omit the salt from the spiced vinegar, and having drained the vegetables let them be placed in a jar, and the heated, spiced vinegar poured over them; they will be ready for use in six or eight days, instead of as many months.

Literature of the Rose.

The Rose is one of the few flowers that has a literature of its own, not only in English, but in the languages of Continental Europe. It is curious to observe the difference between the works of the English writers and those of this country. The English works seem to be written almost solely to teach the raising of roses to take the prizes at Rose shows. In this country we care but little about shows and prizes, and our authors very properly teach their readers how to raise Roses, that achievment being sufficient in itself. Notwithstanding the fact that our climate is most unfavorable for Rose culture as compared with that of Europe, we have accomplished much. A distinct class of Roses traces its origin to this country, and there have always been amateurs who devoted themselves to the culture of this flower, in spite of the unfavorable climate. In its commercial aspect, there is probably no country which excels ours, whether in plants of choice varieties at low rates, or in producing flowers and buds under glass. We have a Rose literature which, if not extensive, is suited to the climate and has had its influence in promoting the cultivation of this favorite flower.

The earliest works devoted exclusively to the Rose, of which we have any knowledge are: "The Manual of Roses," by W. R. Prince, and "The Rose Manual," by Robert Buist, both of whom were pioneers in American horticulture. "Their deeds live after them," but their works would be very difficult to find. More than thirty years ago, there was published "Parsons on the Rose," by Mr. S. B. Parsons, Flushing, N. Y. This work was at once accepted as a standard, a position it has since maintained. Though Rose-culture, so far as varieties are concerned, has greatly progressed since the first edition appeared, it has in its subsequent editions kept pace with it. Following Mr. Parsons' work there came "The Book of Roses," by Francis Parkman (1866), and "The Rose," by H. B. Ellwanger (1882), each being upon a different plan, and each having its merits. Since the last edition of the standard work of Parsons was published, Rose-culture has made great progress, especially in the production of choice varieties, and the work has now been brought up to the present day. The new edition includes all the novelties worthy of cultivation, while it retains those characteristics which has made it a favorite work for the Rose-grower. Orange Judd Company, New York. Price $1.50.

Guenon on Milch Cows.—A Treatise on the Bovine Species in General. Translated from the last and enlarged edition of Guenon, by Thos. J. Hand. New York: Orange Judd Co. Price $1.00.

More than 30 years have passed since "Guenon's system" was published, and those who recollect its first appearance are aware of the interest it aroused. The few Agricultural journals of the time described the "system," and there was much discussion and not a little ridicule. The original work was translated, and one or more other works were written to illustrate "Guenon's system." In the course of 30 years, a "system," if it had no real foundation of fact, would be entirely forgotten. This was not the case with Guenon's. During all these years there has been a regular, if not large sale of the translation of the original work, showing that if the system were not generally adopted, there were many persons who wished to inform themselves as to its merits. And so far as this country is concerned, there are probably more farmers and cattle breeders who make use of Guenon's marks in judging of animals, than there were when his method had the attractiveness of novelty. A generation of readers of Agricultural journals has grown up since the matter was discussed, and finding that "Guenon's Discovery" was new to the majority of these, we gave, last month, a popular account of it, which need not be repeated here. Whether one wishes to adopt Guenon's system, or to show that it has no value, it is proper that he should know just what it is, as proposed by the author himself, and that he should study it as modified by Guenon after many years of practice. The translation under notice is from the last work issued by the author before his death, and published many years after the first edition, from which the only English translations had been made. This, of course, embodies Guenon's very latest views, and such changes in and additions to the early treatise as his experience taught him were needed. Having had frequent occasion to compare this translation with the original, we can testify to its fidelity, and, so far as the language allows, literal exactness. The many illustrations being reproduced by photography, the volume is the most complete presentation of Guenon's treatise to be found in the language.

Christmas Decorations.

Nothing enlivens the general effect of the Christmas greens more pleasingly than a few bright berries. Flowers are often employed, but berries are more appropriate to the season. If we wait until we wish to use them we are apt to find that the birds have anticipated us or severe weather has injured them; it is altogether safer to gather them at once. The Holly is about the only tree that gives us both evergreen leaves and showy berries (save the still rarer Yew), but is found in only a few places. Large quantities are brought to eastern cities just before the holidays, the branches with berries selling at a high price. The vine known as Wax-work and Climbing Bitter-sweet (*Celastrus scandens*), has bright orange pods which open and show a scarlet berry within. This is very showy and useful for decorative purposes in early winter. The related "Burning Bush" or "Waahoo" (*Euonymus*) has pods of similar structure, but dark pink without. The Black Alder (*Ilex verticillata*) has most brilliant scarlet berries.

The Cornels or Dogwoods in their several species have clusters of small berries from nearly white to blue and black. The heps, or fruit of the Wild Roses may be turned to good account. Though not showy, the bluish berries of the Red Cedar may sometimes be worked in with pleasing effect. But our object is not so much to point out all the kinds as to suggest that they be gathered in season. The berries must be kept cool and where they will not shrink; a fruit cellar is perhaps the best place.

The Crops and Prices.

With two very strong parties, having millions of dollars at stake, the one party interested in a rise in prices, and the other in a decline, it is not strange that the most conflicting reports as to the state of the crops are daily, and almost hourly, sent throughout the country. Until the corn crop was safe, every fall of a few degrees in temperature, was heralded far and wide as the approach of a "killing frost." A thermometer variation of 5° to 10° was made effective in sending the price of corn up or down.

Fortunately no severe general frost has come to nip the maturing corn, and this crop is now safely ripened in all the principal corn-producing regions. It is hardly time yet to obtain full accurate statistics as to the aggregate yield. To-day the reports are that the yield per acre is not turning out well. Yesterday we were told by telegraph, in effect, that "corn is now safe, and the crop will turn out far better than the most sanguine had hoped for."—The best information that we can gather, indicates that our estimates given last month were not far out of the way. The wheat crop was mainly gathered and threshed with no disastrous storms to spoil a large per centage, and the corn was able to do its best up to the hardening of the kernels. The acreage and yield has been below the average in some leading corn States, but has been far above the average in others. On the whole, taking the entire country together, there has been a fair crop. While high prices can not be looked for, especially as there is no scarcity of food in Europe, the rates will be kept up to medium, by the fact that the country is stripped of almost the last bushel of old corn, so that a large amount will be absorbed by the usual reserve requirements. And further, except when pinching pecuniary necessity requires immediate sales, farmers will not sell when prices rule very far below what they have been recently receiving per bushel.

The general feeling is, that at this date (Oct. 6,) prices of wheat, corn, etc., have settled down to about their normal level, and that changes in the future will be mainly affected by the rising and falling tide of gambling speculations. So many heavy operators, both as bulls and bears, are now, and will continue to be, engaged in efforts to elevate and depress prices, by "deals," "corners," etc., and so large a multitude of outsiders will cluster around each of the opposing parties, that future rates will be as unsettled as the waves of the sea, but the rise and fall will not be large, except in some temporary outbursts, occurring most frequently about the close of each month.

Farmers can not be governed by these changes, and about the only safe rule for them, is to *sell when they are ready to go to market.* They will be just as likely to lose as to gain, if they attempt to be governed by the course of speculation.

P. S.—An official telegram from Columbus, Ohio, Oct. 6, puts the Ohio Wheat Crop at 45,787,811 bushels, almost exactly the same as the Census crop of 1879, when it was 46,014,869; the corn crop this year, 87,005,280 against 111,877,124 bushels in 1879; oats this year 18,435,779 against 28,664,505 bu. in 1879; barley, 1,337,301 *vs.* 1,707,129 in 1879.

"Hog Products"—Prices.

There is a continued speculation in the articles grouped under the general name "hog products," that is, Pork, Bacon, Hams and Lard. At present the supply is small, and a very few wealthy speculators are able to buy and hold all there is in market, and that comes in, and put prices up to any figures they choose. As the result, Pork is selling wholesale to-day (Oct. 5) at $23 per barrel in Chicago, and at about the same in New York, for delivery in October, and $21.65 for delivery in November. Lard is 12¼ cents per pound in Chicago, and about half a cent higher in New York. For delivery in later months, December to May, the rates are only about one cent per pound lower. There will of course be little pork fattened from the new corn crop before about the close of the year. In ordinary years, with so good a corn crop as is now certain, we would look for a decided fall in the prices of hog products after sufficient time to feed the new crop. But it is to be remembered that owing to the poor corn crop of last year, and the high price of pork during all this year so far, the last hog that could be decently prepared for slaughter has been sent to market throughout all the great Western hog-producing States; and the trouble now will be that there will be a comparatively very small number to fatten. Last spring the *American Agriculturist* forewarned its readers of this prospect, and earnestly advised the saving of and production of all the pigs possible. As it is, though there is likely to be, later on, some decline in pork, bacon, and lard, the probability is that pretty high rates will be maintained during all the winter months if not well into spring and summer. What the actual supply and demand may not do in this direction, will be accomplished by speculators. So we now say to farmers, give good attention to the swine; increase the weight of those ready to fatten, as much as possible, and care for the pigs and multiply them.

Matches—Pick up the Ends.

Parlor Matches, so called, are now in very general use, as they are without brimstone, and light with great readiness. This ease of ignition is a source of danger, and calls for great care. Matches of this or any other kind should never be scattered or allowed to lie about loose. Each room where these are used should have some kind of a "match safe." Very excellent ones of cast iron are sold

in the furnishing stores. There should be some place where matches are to be kept, and they should be left no where else. As parlor matches are now much cheaper than formerly, they are often carelessly made. Poor, cross-grained wood is frequently used, and when the match is struck with force, it breaks, and the end with the fulminate upon it, drops to the floor or often flies among paper or clothing. Whenever this happens, make it a point to always search for and find that end, and either burn it or put it where it can do no mischief. When such a match-end is stepped on, it explodes with a startling report. In some cases the clothing of women and children has been set on fire by this means. We have known of persons being greatly alarmed by such an explosion under foot. A parlor match is a great convenience, but when carelessly kept and used is only less dangerous in the house than a loaded pistol. The Fire Insurance Companies find that a very large percentage of losses by fire is due to friction matches.

RENEW NOW.

Do not wait until the end of the year, but renew your subscription as soon as you get this paper, and would not some of your friends like to come with you ?

Cost of Moving Farm Products from the West to the East.

All classes, producers and consumers, and especially Eastern farmers, are interested in the cost of transporting grain, flour, meats, and other farm products from the agricultural realms of the West to the thickly populated, consuming regions on the Atlantic coast. If, for example, a bushel of wheat can be carried from the fertile fields of Dakota to New York or Boston, for 25 cents, the Eastern farmer has that much advantage over his far Western competitor; and so of other products of the farm. Taking Chicago as the great Western Center for collecting breadstuffs and meats, and New York as the chief Eastern Center for receiving and distributing or exporting, we give below the present established rates of transportation by railroad between these points, which are nearly 1,000 miles apart. From places west of Chicago, not near two or more competing railroad lines, the rates are a little higher for proportional distances.

Railroad Freights. Chicago to New York.
Per 100 lbs.

Wheat, Corn, Rye, Barley and Oats..	25 cts.	Live Hogs.....	30 cts.
Flour, per barrel....	60 "	Dressed Hogs.....	64 "
Wheat, per bushel..	15 "	Lumber, Shingles, Laths.....	30 "
Corn, per bushel...	14 "	Wool	85 "
Oats, per bushel....	8 "	Bailed Hay.....	25 "
Pork, Beef, Lard....	30 "	Salt.....	30 "
Horses, Mules, Sheep	60 "	Tobacco.....	31¼ "
Beef Cattle.....	40 "	Apples, Pears, etc..	60 "

These prices are based on full car load lots. Freight cars carry about 24,000 lbs., or 12 tons of grain. Taking the rates above as the basis, *add* 5 cents per 100 lbs. for freight from Chicago to Boston, and 4 cents per 100 lbs. from St. Louis to New York. *Deduct* from Indianapolis to New York, 2 cents per 100 lbs.; from Cincinnati, 4½ cents; from Detroit or Toledo, 6 cents; from Mansfield, O., 6½ cents; from Cleveland, O., 7½ cents; and from Dunkirk or Buffalo, 10 cents per 100 lbs. From Chicago to Philadelphia, 2 cents, and to Baltimore, 3 cents per 100 lbs. less than to New York.

What is Farm Gardening?

A correspondent who has noticed an occasional mention in the *American Agriculturist*, of "farm-gardening," asks us to explain how it differs from ordinary farming, or from market gardening. The farm-garden is devoted to those crops which can only be raised by high manuring, and thorough cultivation—Cabbages, Cauliflowers, Melons and Celery, and similar crops, which, though perishable, may be transported to some distance. They are raised not to be consumed by animals, but to be sold for consumption elsewhere. Ordinary farming raises the staple crops, wheat, corn, hay, etc., and these are often turned into flesh, wool, dairy products, etc. The proper market-garden is devoted to perishable crops, or those that are only at their best when fresh, hence are near cities or villages, where transportation to the place of consumption occupies but a short time. Farm-gardening is extended market-gardening, or the highest kind of farming. It is such farming as must sooner or later be adopted in all the older and thickly settled parts of the country, where the land is high, and must raise crops that will pay better than corn and the like. The sooner farmers in these localities cease to compete with the West in raising grain, and devote their land to crops which meet a ready sale near home, the less we shall hear of the complaint, "farming don't pay."

A Special Offer.

OPEN. CLOSED.

We are enabled by **a very advantageous** arrangement with a large Manufacturing Jewelry Firm to offer to our readers one of the **Best Watch Chain Magic Pencils,** as shown in the Engraving. It is of the finest gold plate, and the barrel is of imported imitation **onyx.** It has the patent magic movement that is so very popular and desirable in a pencil. The engravings show length and size, closed and open. It is suitable for a lady or gentleman, and very convenient to carry in the pocket, as well as on the chain. In fact it is one of the most complete Pencils of its kind, and something that

EVERYBODY WANTS.

We have only been able to secure a limited quantity of these beautiful Pencils, and while they last, we will send one of them, post-paid, to any present subscriber, who will collect and forward **ONE** new subscription to the *American Agriculturist*, English or German, at $1.50; OR we will supply it for the price, which is $1.50.

THE

Amerikanischer Agriculturist 1883.

The German *Amerikanisher Agriculturist* has been published for twenty-four years, and stands to-day in the **front rank of German Agricultural publications,** being recognized in all quarters as **authority in agricultural matters,** and **far superior to anything** of the kind published in the world. The benefit of the immense outlay for editorial work, contributions and the multitude of expensive illustrations which is required in the preparation of the American edition, is received by the *Amerikanischer Agriculturist.*

AN ENTIRELY SEPARATE JOURNAL.

While the *Amerikanischer Agriculturist* has the benefit of all of the enterprise and energy and expenditures of the English *American Agriculturist*, as above stated, it is hereafter to be an entirely separate Journal from the former, presenting only such matter as is specially adapted for the Germans, and containing departments expressly conducted for the German people in the United States. We have made arrangements, and are still making further arrangements, to have the ablest German writers. With one exception, the *Amerikanischer Agriculturist* is the only purely German agricultural paper published in the United States.

No pains or expense will be spared in making this journal an absolute necessity to all German cultivators or laborers on the farm or in the garden, who desire to do their work intelligently and in the best modes.

NEW MANAGEMENT.

Among others who from this time forward will devote their entire time to the *Amerikanischer Agriculturist* is Prof. C. H. PLUGGE, educated at the famous Universities of Bonn, Leipsic and Brussels. Twelve years ago Prof. PLUGGE came to this country. For six years he was connected, as a professor, with leading educational institutions; for six years he has been the official translator of the United States Government, in the Bureau of Education, Department of the Interior, and has had charge of all foreign works, libraries, correspondence, etc. In his official capacity he has become thoroughly familiar with the wants and needs of the German gardeners and farmers in the United States. He knows where every German settlement is located, and what are the special requirements of these settlements. He brings to the work earnestness and enthusiasm.

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The farmer, gardener, and fruit grower will always find in the *Amerikanischer Agriculturist* most valuable information. Not only the fathers and sons, but the mothers and daughters, and even the little ones, all will be supplied with much to interest and aid them in every number of this journal. Many Americans who have Germans in their employ, take the *Amerikanischer Agriculturist* for their use, and find they make better *gardeners and workmen*, from the reading of it.

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Catalogues Received.

According to our custom, we here give the list of autumnal catalogues. Those of our friends who send orders, will oblige us by stating that they saw the announcement of the dealer in the *American Agriculturist*. The list will be continued in the December number.

NURSERYMEN.

Including those who make a specialty of Small Fruits.

H. S. ANDERSON, Union Springs, N. Y. Small Fruits, Pot-grown Strawberries.

JESSE BATTY, Toms River, N. J. The Manchester Strawberry.

P. J. BERCKMANS, Augusta, Ga. A large, general list, and a special one for Florida.

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R. C. CHASE & Co., Geneva, N. Y. Fruit and Ornamental stock, with a very handsome engraving of *Ampelopsis tricuspidata*, commonly called *A. Veitchii*.

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ELLWANGER & BARRY, Rochester, N. Y. A general Catalogue of Fruit, and Ornamental Trees, etc., and one of Small Fruits, especially Strawberries.

GREEN'S NURSERIES, Rochester, N. Y. An instructive catalogue, with several novelties.

G. H. & J. H. HALE, South Glastonbury, Conn. Strawberry list. A colored plate of Manchester.

W. F. HEIKES, Huntsville, Ala. Trade list of general Fruit Stock.

PETER HENDERSON & Co., 35 Courtlandt St., N. Y. City. Pot-grown Strawberries, with colored plate.

T. S. HUBBARD, Fredonia, N. Y. Grape-vines, the "Prentiss," a speciality.

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WILLIAM H. MOON, Morrisville, Pa. Pot-grown Strawberries.

J. B. MOORE & SON, Concord, Mass. New Cross-bred Asparagus, and other specialties.

JOHN C. NELTNOR, Turner Junction, Ill. In "Fruit, Flower and Vegetable Grower," gives useful information upon all these topics.

F. K. PHŒNIX, Delavan, Wis. We are glad to see that our old friend offers a general stock in his own way.

J. A. ROBERTS, Malvern, Pa., offers a condensed list for autumn planting.

E. P. ROE, Cornwall-on-the-Hudson, N. Y. Illustrated catalogue of Small Fruits.

SAM'L H. RUMPH, Marshallville, Ga. A large collection of Orchard and Small Fruits.

B. L RYDER & SONS, Chambersburg, Pa. Strawberry Catalogue, with specialities.

JOHN SAUL, Washington, D. C. Special Tree catalogue, Fruit, Evergreen, and Ornamental.

SEEDSMEN AND FLORISTS.

The catalogues of seedsmen at this season are mainly devoted to Bulbs. As all here enumerated offer large assortments of Dutch and other Bulbs, it is not necessary to state it for each.

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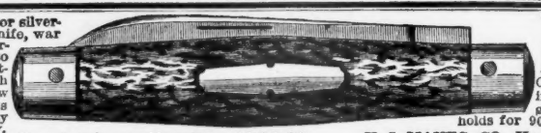

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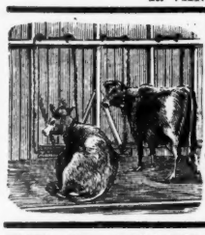

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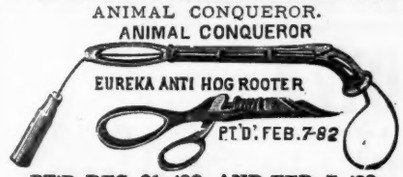

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